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ART. I. *Remarks on the Variety of Complexion and National Peculiarity of Feature.* By RICHARD HARLAN, M. D. Lecturer on Anatomy, Professor of Comparative Anatomy of the Philadelphia Museum, &c. &c.

“The intellectual worth and dignity of man, are measured not by the truth which he possesses, or fancies that he possesses, but by the sincere and honest pains he has taken to discover truth.”—TREVIRANUS.

TRANSPORTED into the midst of a busy metropolis of India, where men, from various portions of our globe, pass, as it were, in review before the spectator, the very first circumstance, perhaps, that would strike the eye of the most superficial observer, would be the variety of tints or shades of colour, and peculiarity of feature, which characterize the mixed multitude.

This subject (*complexion*,) has long interested the philosophers of every nation, and has often led into discussion the most accomplished and improved understandings; but, as is frequently the case with men of genius, they have treated it too abstractedly. Led away by their powers of ratiocination, they have drawn their conclusions from *analogies* rather than from *facts*; and though we may be often delighted—sometimes, indeed, conquered by their logical powers, yet but little light has been thrown upon the subject of dispute; and the cause of national physiognomy and complexion remains as much a subject of discussion as ever.

It is with this view, considering the field open to fair and candid investigation, that I have ventured to enter the list—endeavoured to collect and arrange facts—performed some experiments, and made a few observations, which it is now my intention to communicate.

I shall not in this investigation stop to inquire whether all mankind are to be considered as of one natural species or not; that is, whether the physical diversities which so curiously distinguish the several races of men, are *specific* differences, or only varieties. That one pair at least of every living species must at first have been created, and that one single pair was sufficient for the population of our globe in a period of no considerable length, is evident from the most common calculations of political arithmeticians. “The author of nature,” says Sir William Jones,* “created but one pair of our species, yet had it not been among other reasons, for the devastations which history has recorded of water and fire, famine and pestilence, the earth would not now have had room for its multiplied inhabitants.”

Notwithstanding the learned and elaborate dissertations of many naturalists and philosophers to the contrary,† it is now satisfactorily proven by modern zoologists, that all the diversities of mankind are but *varieties of one original stock*.

Indeed, agreeably to the zoological definition of the term *species*, it could not be otherwise.

“A fixed external form belongs to each animal, and is continued by generation: certain forms, the same as those existing in the world at the present moment, have existed from time immemorial; such at least is the result of the separate and combined proofs furnished by our own observation and experience respecting the laws of the animal kingdom by the voice of tradition and of history, by the remains of antiquity, and by every kind of collateral evidence.

“All animals belonging to one of these forms, constitute what zoologists call a *species*. This resemblance must not be understood in a rigorous sense, for every being has its individual characters of size, figure, colour, proportions; in this sense, the character of variety is stamped on all nature’s works. She has made it a fundamental law, that no two of her productions shall be exactly alike, and this law is invariably observed through the whole creation. Each tree, each flower, each leaf, exemplifies it, every

* Vide Families of Nations.

† Among whom we may mention Voltaire, Buffon, Blumenbach, lord Kaimes, and many other English authors.

animal has its individual character, each human being has something distinguishing in form, proportions, countenance, gesture, voice, in feelings, thought, and temper, in mental as well as corporeal physiognomy. This variety is the source of every thing beautiful and interesting in the external world, the foundation of the whole moral fabric of the universe."*

But to return. Three *principal* agents have been mentioned as the cause of *complexion*, namely, 1st, *Climate*; 2d, *Solar heat and light*; and lastly, *Civilization*, each of which has been maintained by equally respectable authority.

The following facts induce me to believe that the first cause, or climate alone, exerts very little influence in this respect. 1st, Is colour more influenced by *climate* or by the *blood* of the *parents*? The colour of the skin of an infant just born of the blackest parents amidst the burning sands of Africa, is so light, as scarcely to be distinguished from the European infant; from which fact, some naturalists might argue in favour of climate slowly inducing the change; but if the opinion I entertain of the formation and seat of the pigmentum nigrum be correct, it must be explained upon opposite principles. The colouring matter of the skin is generally admitted to be a glandular secretion; and as that which ascends the calibre of the hair, imparting colour thereto, is secreted in the bulb of the root of each respective hair, that lying beneath the cuticle is also *secreted*, (and probably contained in capillary tubes, of which tubes, the rete mucosum may consist.) Thus it is remarkable that the several hues of the different varieties, bear a close and nearly uniform relation to that of the hair and of the iris, as well as the whole temperament of the individual.

The colouring matter being a secretion, it consequently is not found in the human fœtus in utero, as, in common with nearly the whole glandular system, those glands which secrete the pigment are as yet in a state of inactivity. Do we not observe the same in that large and important viscus the liver, which in the fœtus affords no bile? of the kidneys, which form no urine? of the exhalants, which throw out no perspiration? &c. &c.

It would appear that atmospherical influence was absolutely necessary to the true secretory function, which may act by producing such changes in the blood as adapt it to the formation of the various matters of secretion. In the fœtus in utero, the blood circulating in the arteries and veins, has but one colour; it is, (according to Bi-

* Lawrence's Lectures.

chat's experiments) incapable of coagulation; * unctuous to the touch, and wants (according to Fourcroy) some of the saline principles contained in adult blood. Immediately after the commencement of respiration, the fœtal blood gains the red colour, is capable of coagulation, &c. &c.

The functions of the fœtus in utero are consequently very limited, assimilation being the only one which enjoys *full activity*; and here, probably, the liver performs a vicarious action for the stomach. I confine my remarks in the present instance to the *human* fœtus only, being well aware, that in the lower orders of the animal creation, the fœtus at birth is by far more perfected; in these the glandular system has already commenced operations; hence the necessity in some for the *allantois* to contain the urine. In such animals we must not be surprised to observe the colours of the skin also more or less stamped.

Although it is with great difficulty that we are able to demonstrate the rete mucosum in the European race, nevertheless, "*that some colouring matter exists beneath the skin, there can be no question, otherwise how can we account for the difference between the fair and the swarthy, or the more remarkable peculiarity of the albino.*"†—The freckles of the skin, the large blotches or stains which not unfrequently occur in the face and other parts of pregnant women, and the discoloration of the skin from the internal use of nitrate of silver?

The existence of the rete mucosum in the white race, so frequently denied by authors, has, however, been demonstrated occasionally in the European by skilful and able anatomists: a specimen of this kind remains to the present day in the Hunterian museum. The difficulty of demonstrating it in the European depends upon the delicacy of its texture, being entirely destroyed by

* *Bichat's Anat. General*, vol. ii. As far as the human fœtus is concerned, I have had frequent opportunities of verifying this important fact; but in performing some living dissections upon the pregnant cat, I have repeatedly observed the fœtal blood of that animal to coagulate as perfectly as adult blood, the only difference being, that the blood of the kittens as it left the vessels, was exposed to the air in a living state. Blood from the human fœtus will coagulate partially after very few inspirations.

† Lawrence's Lectures, p. 278. In Brewster's New Edinburgh Philosophical Magazine, it is stated that "that able physiologist, Mr. Lawrence, denies the existence of the rete mucosum in the European."

heat, maceration, or putrefaction, the usual agents for demonstrating the same but more consistent membrane in the Ethiopian. If not deceived, I have discovered it several times in the European on the living subject, by raising the epidermis with a blister, more especially upon the back of the hands and neck.

In the *albino* the rete mucosum is most probably absent, as is the pigmentum of the choroid coat of the eye. The same phenomenon occurs also in the cicatrices of the negro, which sometimes remain fifteen or twenty years, or for life, of a dead white colour, unless the new-formed part should regain its pristine vascularity, and strength of organization.

From some observations I made a few years past upon a portion of skin taken from the buttock of a piebald negress who died in this city, I was convinced, that in all such cases, the metamorphosis from black to white (we observe occasionally to take place in the negro) is dependent upon the total absorption of the rete mucosum and a destruction of the glandular system, which originally secreted it. The cutis vera also in this case is far less vascular, which occasions the *dead white* colour displayed through the translucent epidermis.

But to return to our objections against climate as an important agent in producing variety of colour; and 2dly, "Diversities of manners, religion and language, and mutual animosities which may have originated from long subjection to hostile governments, and may have been transmitted from distant times, produce aversions between the inhabitants of neighbouring countries, and prevent intercourse and intermarriages. The difference gradually increases, the effect accumulating while the cause continues, the people diverge in the characters of person; and national physiognomy becomes established." (*Vid. Prichard. Phys. Hist. of Man*)

The inhabitants of some parts of India; Calcutta for example, present all the intermediate shades from ebony black, to orange yellow, and that independent of climate, as they all enjoy a similarity of climate and mode of life; particularly as it occurs in the Brahmin cast, whose religious tenets oblige them to follow strictly a peculiar mode of life. "The different casts of people in Hindostan, who are settled in the same country or who wander over it, have been prevented by the strict prohibitions of their religion from intermarriages with each other for many ages; the result of this long continued experiment is illustrative of the foregoing re-

mark—each of these casts has acquired (though all of them are subject to the same local causes) a distinct set of features; all easily recognised by those who are conversant with them.”

The characteristic physiognomy of the inhabitants of the different states or provinces of Italy; the difference of feature which we remark between the English and Scotch, and between the French and Italians; together with that remarkable characteristic physiognomy of the Jews, though scattered among the nations of the earth, must have arisen from the same cause.

The following anecdote from Dr Gregory's lectures, will afford a good exemplification of the subject. The professor had made a long journey from the capital of north Britain to a remote village, to visit the principal inhabitant of the hamlet—the latter was a lady far advanced in life, who resided in an old baronial castle. On entering the hall his attention was attracted by a picture of a former lord of the place, who had some time been chancellor of Scotland. It held a conspicuous place among the family portraits, and was remarkable for a protruberant aquiline nose, and for a very peculiar set of features; but what excited the notice of the professor more strongly, was a singular resemblance which he could not fail to observe, between the countenance represented in the picture, and that of the lady whom he was about to visit; the latter was descended in a direct line from the prototype of the portrait; the picture had held the place in which it was fixed for at least a century and a half. Going afterwards to other houses in the village, our author was surprised to find the same cast of features prevalent in several other families, and on inquiring, was informed that the old chancellor had been the father of several illegitimate children, who had disseminated thus widely the visage of their common progenitor.

We cannot imagine diversity of origin, or any considerable effect arising from difference of soil and climate in either of these instances, and perhaps the distinct physiognomy which characterises the several nations, may in great part be accounted for on the same principles.

Variety in food, and the hereditary tendency of peculiar corporeal structure in the *brute species*, produce still more remarkable varieties; it is thus that we have the white, the black, the broad-tail, the hornless, and the many-horned sheep, together with every variety in the quality of the wool, induced from one or other of these causes: the same remarks may be extended to any of our do-

mestic cattle. Human art alone can do but little in modifying the individual, but by diligently taking advantage of the natural tendency, to transmit any qualities which happen to arise, a very considerable influence is exercised over the race; we have only to select carefully those individuals which happen to be possessed in a more remarkable degree of the property or quality, which it is desirable to perpetuate, and reserve them for the future propagation of the stock. The effect continually increasing, a particular figure, colour, proportion of limbs, or any other attainable quality, is established in the race, and the conformity is afterwards maintained by removing from the breed any new variety which may casually spring up in it. The utility and extensive application of this law of the animal economy, is well understood by the skilful and scientific agriculturist. Some authors are of opinion that all the varieties which occur among the nations of the earth, were originally the result of accident rendered permanent by procreation, examples of which in brutes, we have in white *rabbits* and *ferrets*.

3dly. Sheep in Iceland are covered with a kind of long and stiff hairs, whilst the same animal is subjected to a similar change in the hot countries of India.

4thly If the *wool* of the negro be caused by the *heat* of the *climate*, as authors have asserted, it is very singular that the *wool* of sheep is converted into *hair* by a similar cause! The fact is, that *climate*, solar heat and light, atmospheric influence, passions of the mind, and substances taken into the stomach, which act sympathetically or otherwise upon the superficial capillaries, can have no more influence upon the colouring matter *already secreted* in the rete mucosum, than they can have on the urine in the bladder, or any other secreted fluid: it is true, that exposure to the rays of the sun and to the atmosphere in any climate darkens the complexion; and in fair skins produces indelible freckles; yet such changes, together with others induced by the causes above enumerated, act primarily upon the *organs* which *secrete* the colouring matter, and consequently are constitutional causes; and probably of all such causes, the action of *mind* upon *matter*, will be found the most *general*, most permanent, and the most powerful.

Passions of the mind are capable of inducing a change of colour both in the hair and skin. A woman of this city (some years ago) had the hair of her head completely changed in colour during the

course of one night: her case was that of difficult parturition; though her corporeal pain did not probably equal the anxiety and distress of mind. (*Vid. Coxe's Med. Museum.*) Cases somewhat analogous are not unfrequently met with.

The passions act also upon the kidneys, inducing change of colour, and altering the chemical properties of the urine; they act also more or less powerfully upon the whole glandular system; indeed the influence of mental affections does not stop here, but is extended even to the embryo or fœtus in utero, modifying not only the osseous fabric, but changing the colour of a part, or of the whole of the body. Innumerable cases of this kind must have come within the knowledge of every physiologist. It is curious that this phenomenon was known even to some of the *Antediluvians*; and the means of which *Jacob* availed himself, in order to increase the number of spotted goats and sheep, must be familiar to all. (1739, *A. C.*)

V. 37. "And Jacob took him rods of green poplar, and of the hazel and chesnut tree; and peeled white streaks in them, and made the white appear which was in the rods.

V. 38. "And he set the rods which he had peeled before the flocks in the gutters, in the watering troughs, when the flocks came to drink; that they should conceive when they came to drink.

V.*39. "And the flocks conceived before the rods, and brought forth cattle, ringstreaked, speckled and spotted." (*Vid. Genesis, Chap. 30.*)

The effects of fright upon the fœtus in utero are sometimes incredible; I have seen one case, and heard of others from respectable authority, wherein disorganization appeared to have been induced by this affection. A woman pregnant, was admitted into the Pennsylvania hospital with a severe burn which extended nearly over one side of the body: abortion soon took place; when the fœtus was observed to have one side of the body displaying the usual appearance, as of a part which had been exposed to boiling water, the skin was highly reddened and the cuticle in part abraded. A similar case occurred about the same time under the care of Dr. Atlee of this city.

"*Mr. John Hunter*, in his lectures, recites instances of children who have never seen their parents, resembling them exactly in form, manners, and in peculiar whimsical habits. He also mentions the fact that children have acquired the same diseases at the same period of their life, to which the parent had also been subject at the same age. Such instances are not only curious as demonstra-

tive of the powers and progress of the vital actions, but they also deserve general consideration."

"Nature has implanted in the breast of every man, a love for youth, health and beauty of form; she has made us to delight in amiable disposition, and to admire various kinds of intellectual excellence. She has given us propensities which tend to perfectionate the human race." (*Vid. Abernethy, Zool. Lect.*)

But alas! how little the moral restraint, how perverted the sense, how morbid the taste of men; whilst the most fostering care and unremitted exertions are extended to the breed of our horses, sheep, cattle, and other domestic animals; the improvement of our own species by the same adequate means is utterly neglected or denied: and for the consideration of mere lucre, or the allurements of vanity, we are wedded to malignity, folly or insanity, and consigned to disease, deformity and death premature:

"Quid non mortalia pretora
Cogis; auri sacra fames!"

but if, like *Prometheus*, we presume to give life in opposition to the laws of Heaven, we shall receive the same punishment; for our children will become the vultures which prey upon our vitals.

5thly. Negro slaves imported into our country, undergo considerable changes in colour and osseous fabric, under peculiar circumstances apparently independent of climate.

Take for instance two pair of negroes,—allow one pair to be exposed to all the influence of climate by hard labour on the plantation; the other pair are to be *educated* as house servants, and not exposed to the rigours of climate. The progeny of the former will from generation to generation retain the full characters of the negro form,—namely, retreating forehead, anterior prominence of the malar bones, expanded nasal apertures, flat ossa nasi, prominence of the maxillary bones, obliquity of the incisor teeth, want of mental prominence, gibbous and crooked tibiae, projecting os calcis, and flat foot; whilst the latter pair or house servants, even in the first generation, have approached considerably to the European form, simply by being in, and enjoying the atmosphere of civilization.

Dr. S. S. Smith was one of the first to remark, that "the field slaves live on the plantations, and retain pretty nearly the rude manners of their African progenitors. The third generation in consequence preserve much of their original structure; though

their features are not so strongly marked as those of imported slaves. But the domestic servants of the same race are treated with lenity, and their condition is little different from that of the lower class of white people. The effect is, that in the third generation, they have the nose raised, the mouth and lips of moderate size, the eyes lively and sparkling, and often the whole composition of features extremely agreeable. The hair grows sensibly longer in each succeeding race—it extends to three, four, and sometimes to six or eight inches.”* It has been asserted by persons resident in the West Indies, that a similar change is very visible among the negro slaves of the third and fourth generation in those Islands, and that even the first generation differs considerably from the natives of Africa.

If climate did exert that active influence in producing, and in continuing those important differences of which we are treating, the change of complexion would have kept pace with the changes of climate; but this we are convinced is not the case. No one will call in question the fact, that the climate of Europe has undergone immense changes within the memory of man, and prior to the earliest records of his history; we are informed by the sacred historian of the occurrence of ice in the Mediterranean sea, as hard as the rocks. (*Vid. Book of Job.*) Ovid, complaining of the hardships of his banishment, refers to the severity of the cold, the black sea being frozen sufficiently hard to bear the cattle.

Philadelphia and Lisbon are nearly on the same parallel of latitude: in the latter situation the fall of snow is looked upon as a very rare occurrence, and the formation of ice is scarcely ever known; whilst the Delaware is almost annually congealed. Many facts might be produced in proof of the amelioration of our own climate.

That in America, from the great lakes to the gulph of Mexico on the one hand; and from the sea-coast to the Rocky mountains on the other, includes almost every *variety of climate*, will scarcely be denied; and that there exists a great uniformity of complexion in the savage inhabitants throughout this immense region is equally certain; yet the customs, habits of life, and mode of thinking are nearly the same. I consider these strong facts, which, at the same time that they discard climate as an active agent, give additional

* Vid. Smith on the cause of the variety in the complexion and feature of the human species.

strength to the theory which attributes the diversity of complexion to the *state of society*.

During the fall of the *Roman* empire, the barbarians who involved it in ruin, crossed the *Volga* with their heavy waggons upon the ice. We are well aware that the congelation of water is a rare occurrence at the present time in like latitudes. Besides these historical facts, some of which are corroborated by *Gibbon*, (*Rise and Fall of Roman empire*,) we have others equally convincing, derived from the aid of *natural science*. *Cuvier* has discovered the osseous remains of the Lapland reindeer in countries south of the Mediterranean; those animals do not now inhabit south of the Baltic sea. It would be foreign to the subject of the present essay to enter into an investigation of the *causes* which have produced these slow but stupendous revolutions; and we have only to remark again, that the change of climate *has not been attended with a corresponding change of complexion*.

Having, I trust, made it evident that climate alone can exert very little direct influence upon complexion, we have next to shew that *solar heat and light* are equally inadequate to produce the various changes.

1st. Those parts entirely out of the influence of solar heat and light, are constantly of a deeper black than any other part of the body, (*ut vulva feminae et raphe scroti maris*,) and the streak of black along the spine will serve to detect the African origin, even to the fourth and fifth generations.

2d. African animals with the skin partly marked, as the monkeys, are not blackened by the sun; there are even white animals in the hottest parts of Africa: but a white woman has never been known to produce a black child without connexion with a black.*

3d. The black colour is not peculiar to the torrid zone. South America, even in the most scorching latitudes, does not produce real negroes; and those transported to North America, have preserved for many years their original complexion. The Portuguese established upon the burning coasts of Africa, have not changed their characters unless by intermarriage. We find, in fact, a race of negroes in *Van Dieman's land*, under a climate colder than France or England.

* Dr. Pearson in *Philosoph. Trans.* vol. 55, relates several instances of white women bringing forth children wholly black by connexion with a black.

We come now to the last agent mentioned, viz. *Civilization*. Animals, in a state of nature, obstinately retain their original colour, even when transported to a foreign climate. Thus the English rabbits bred in this country, have not approached in the least to the colour of the American rabbit.

That matchless philosopher in his own department, *Cuvier*,* remarks that the most superficial characters are the most variable; colour depends very much upon the light; the thickness of the skin upon the heat; the size upon the abundance of nourishment: but in a savage animal, these varieties even are very limited by the nature of the animal, which does not abandon voluntarily those places where it is enabled most conveniently to obtain all that is necessary to the maintenance of its species, and which extends itself no farther than it can find the reunion of such conditions. Thus, although the wolf and the fox inhabit from the torrid to the frozen zone, scarcely does it display, in this immense interval, any other variety than a little more or a little less beauty of fur. On comparing the cranium of the fox of the north and the fox of Egypt with those of France, no other than individual difference is observable.

Savage animals confined to closer limits vary still less; particularly the *carnivora*; a larger mane is the only difference between the hyena of Persia and that of Morocco. Wild *herbivorous* animals experience a little more evidently the influence of climate, because there is joined thereto a variety of *nourishment*, which differs as much in quantity as quality; thus elephants are larger in some forests than others; they have the tusks a little longer in those places where the nourishment is more favourable to the formation of ivory. It is the same as relates to the horns of the reindeer or the stag. But compare together two elephants the most dissimilar, and no difference is observed in the number or articulations of bones; in the teeth, &c.

Again, the *herbivora*, in a savage state, appear to be more restricted than the *carnivora* in their dispersion, as nourishment is here joined to temperament to arrest them. Nature has also taken care to prevent the confusion of species which might have resulted from their mixture, by the mutual aversion with which she has endowed them.

* Vide Foss. Organ. Rem. Discours. Prelim. p. 77.

colour depends on light alone, why
insects in northern latitudes, in

But the empire of *Man* alters this order: he developes all the variations of which the type of each species is susceptible, and obtains results which the species, left to themselves, would never have produced. Even here, the degree of deviation is proportioned to the intensity of the cause, which is *domestication* or *slavery*.

These facts alone argue the importance of *civilization* or *domestication* in producing the various changes under consideration. View for a moment the immense chasm separating the civilized from savage man. We see the former surrounded by a vast extent of country cultivated by the labour of his hands; by whose industry the forest is levelled to the ground, and the wilderness is made to smile with the thousands of mixed vegetables which are scattered over the soil; each of which absorbing and exhaling, or vegetating after its own manner, must exert considerable influence in modifying the air we breath.

From the cultivation of the soil naturally arises a great variety in our articles of food; add to which, the studied arts of cookery, and the acknowledged effect of many articles of food upon the organic functions, even upon the *operations of intellect*, the distance between the untutored savage and civilized man is highly magnified; the gross sensuality of the one, unrestrained by the laws, and unsubjected to the abuses of civilized life, pursuing only the inclinations of his appetites; and the conscious dignity, the expressive features, and the intellectual resources of the other, are truly striking.

The operations of intellect alone, would go a great way to explain some of the most marked peculiarities which distinguish the *features* of the various nations of the earth, though I cannot concur with that able and eloquent author* who endeavours to show that our primogenial parents were black, and that their progeny were gradually bleached by intellectual cultivation and civilization. After demonstrating that the changes of colour in all kinds of animals is from the darker to the lighter tints; that there are many examples in the human species of the light varieties appearing in dark races, and that the dark races are best adapted by their organization to the condition of rude and uncivilized nations, (which he conceives to have been the primitive state of man.) He continues,

* Dr. Prichard. *De generis humani varietate*, dissert. inaug. p. 233.

"If there be any truth in the above remarks, it must be concluded that the process of nature in the human species is the transmutation of the characters of the negro into those of the European, or the evolution of white varieties in black races of men.

"We have seen that there are causes existing which are capable of producing such an alteration, but we have no facts which induce us to suppose that the reverse of this change could in any circumstances be effected. This leads us to the inference, that *the primitive stock of men were negroes*, which has every appearance of truth; since however it is a conclusion which may be questioned, it will be proper to state more at length the arguments which offer themselves in its support," &c. &c.

It has been observed by men whose opportunities for observation rendered them best qualified to judge, that a happy married couple, whose union has been a union of souls, who tread the path of life together, mutually partaking of its sorrows and its joys, who move by one sentiment, and constantly sympathize with each other's feelings; I say, such a pair have been remarked to assume in the course of time, a similarity of features, though at first of very opposite characters.

2d. In our daily intercourse with man, do we not observe on the one hand, features "sickled o'er by the pale cast of thought," and wrinkled, not with age, but with disappointment and sorrow?

On the other hand, we observe individuals far advanced in years, with features unruffled by the cares of life, whose affections have not been chilled, or whose hopes have not been blasted, who tread the earth with light hearts, and retain ruddy complexions. Compare the hale and rustic features of the clown with the supple and delicate lineaments of the citizen; or the wily finesse of the courtier with the frank and military air of the soldier; the calm and reflecting aspect of the man of study, to the fiery phiz of the drunkard, or the haggard and sinister traits of the villain. The state of the purse impresses as striking a character upon the face of the rich and the poor, as does vanity and abjection upon the powerful and the weak.

3d. Observe the retreating and narrow forehead, the contracted brow and vacant glare of ignorance, and compare with the bold and expansive front, the lofty brow, the penetrating eye and determined lips of the hero, born to command; set each feature in motion, and behold the *fire of expression*; a single glance is sufficient to

penetrate the breast, and strike terror into the hearts of his inferiors.

So much for *individual* differences of expression; all induced by external causes. But independent of these minuter differences, there remains a *national* peculiarity to be accounted for.

Men are by nature, gregarious, social, and dependent beings, united together in greater numbers for the purposes of support in some common cause, or for the various purposes of existence, they constitute *nations*!—they contract a peculiar cast of thought, mode of expression, and habits of life; at least in such points as are considered of national importance. In this they would of course be influenced by the circumstances under which they happened to be placed, as regards climate, temperature, food, mode of life; or in other words, by the progress they had made in *civilization*.

That a number of human beings should thus contract *national characteristic features*, is to me no more surprising, than that there should exist a national peculiarity of thought, and other collateral causes, that may aid in modifying the solids.

Any thing concerning the physical history of our species, must be acknowledged of the highest interest and importance. If the few facts I have had the honour of laying before the society, should excite in its members a spirit of investigation, my object is fully accomplished.

ART. II. *A singular Case of Scrotal Hernia.* Communicated by
EZRA MICHENER, M. D. of Chester county, Pa.

WHILE *extraordinary* cases, the mere *error loci* of nature, and which are only calculated to create astonishment, or excite stupid wonder, are sought after with avidity in the pages of a medical journal; it is a cause of regret, that the more interesting cases of *ordinary* disease, are passed by with neglect. In this extensive country, whose diversity of climate is only equalled by the variety of its soil, a clinical case-book, confined to the humble task of recording cases as they occur in actual practice, would perhaps be the most valuable acquisition to our science, and the richest boon that the profession can bestow. Believing that you and many of your readers will unite with me in sentiment, I am the more willing to place an occasional case at your disposal.

CASE.—About the latter end of the 10th month 1820, Mahlon Preston, aged 40 years, suffered an attack of colic, to which he was habitually subject, from a large intestinal scrotal hernia of the right side of many years duration. Copious and repeated bleedings, with active and daily purging, were among the means employed in its removal. During this time there was no disposition to strangulation, cathartics operated freely, and the contents of the hernia were easily replaced by the patient himself when in a horizontal position.

On the 15th of the following month, during his convalescence from this attack, I was requested to visit him on account of a new disease. He informed me that three days before, his attention had been excited by a slight uneasiness about the abdominal ring of the left side, and on examination he discovered that a rupture had taken place there also. There had been no sensible increase of the tumour since he first noticed it. He further informed me that he had been subject from his earliest recollection to what he considered, a “flabby enlargement of the cord” on that side; and that for several months past he had sometimes experienced a “pressing pain” at the abdominal ring, as if there was something about to come down, but which was easily relieved by friction and pressure on the part affected. On examination, I found the scrotum occupied by a hernial tumour about four inches in length and nearly pear-shaped. Its surface was smooth and of a firm consistence, and there was no tenderness to the touch; but when pressed upwards against the ring, it gave acute pain, indicating inflammation at that point. The taxis entirely failed in its reduction, but I was satisfied from the size and density of the tumour, that it never could repass the ring without the aid of the knife. The pain which this attempt occasioned likewise rendered it probable, that adhesions might already have taken place about the ring. Under the existing circumstances of the case, I gave it as my opinion, that a reduction could not be effected without the assistance of the knife; that the contained bowel was omentum *alone*, and had probably existed in that state, in a smaller degree, from the earliest infancy; and that, by a strict attention to rest, a recumbent position, abstemious diet, cold applications to the tumour, and evacuations, when indicated, the inflammation would terminate in adhesions without further inconvenience, and thereby prevent an additional increase of the disease. Consistent with these views, I en-

joined absolute rest in a horizontal posture; a vegetable diet; cold applications to the tumour; daily cooling laxatives, and the frequent loss of blood. Under this plan of treatment the inflammation appeared on the decline, until the morning of the 21st, when the uneasiness about the abdominal ring began to increase. This was attended with some fever, and a pulse more full than usual. Took twenty ounces of blood from the arm which was quite sizzly.

22d. Symptoms milder than yesterday: took eighteen ounces of blood, which was less sizzly than the last.

23d. Experienced some return of pain during the night, with a loss of power to move the lower extremities for a short time; both of which soon subsided. Has some fever with an active pulse. Took sixteen ounces of blood, which was quite sizzly. The bowels were constantly, and without difficulty, kept in a soluble state, and the antiphlogistic regimen strictly pursued.

Aware of the difficulty, and apprehensive of the danger of the case, I requested a consultation this morning, with my friend Dr. Josiah Ankrum. After a careful investigation of the case, he confirmed the opinion which I had given, as to its nature, but we apprehended, that complete strangulation would probably soon take place, and even render recourse to the knife necessary. The same treatment was perseveringly continued, and we concurred in requesting the advice of a third physician.

24th. Rested well since the last bleeding; slept comfortably during the night, and appears nearly free from pain and fever. Towards evening however the fever returned, with considerable pain in the affected part; at which time Dr. William Price, from Philadelphia, also met us in consultation. After a free conference on the subject, and at the urgent solicitation of Dr. Price, we consented once more to try the taxis, aided by bleeding *ad deliquium animi*, and if that should fail, by the use of tobacco injections. Both means were fairly and fully tried, but they completely failed. We were now all convinced that reduction could not be effected: but in the absence of every symptom which might be supposed to indicate complete strangulation, we could not think seriously of performing an operation for the relief of the incarcerated bowel, and left him, to meet again the next morning.

25th. We found him free from pain and fever, but his pulse was more active than might have been expected, from the exhausted state in which last night's treatment had left him.

Having given up all idea of an operation, under the existing circumstances of the case, an important question occurred,—what course ought to be pursued? On considering the mildness and long continuance of the symptoms, we were led to believe, that the inflammation would not pass the adhesive stage, and concluded accordingly, to persevere in the treatment already adopted, rendered more effectual by elevating the feet of the bedstead.

Very soon after we left our patient this morning, he was seized with a severe obtuse pain a little to the left of the umbilicus, the extent of which was easily covered with the end of the finger. This, which was the only severe pain he had suffered, continued to increase till four o'clock in the afternoon, at which time I saw him. His suffering was almost insupportable, with some soreness to the touch at the seat of the pain, but the parts involved in the hernia were entirely easy. The fever had rose considerably; the skin was dry and hot, and the pulse full, tense, and frequent. I took twenty-eight ounces of blood, without perceptible relaxation; directed the bowels to be evacuated by enemata, and applied cold cloths to the seat of pain. Two hours after, the pain was sensibly relieved but not removed, when a blistering plaster was substituted for the cold applications.

26th. The pain subsided on the drawing of the blister. He is free from pain this morning; has but little fever, and his pulse, which is soft, beats one hundred and twenty strokes in a minute. The scrotal tumour appears larger, and is more sensible to the touch.

27th. Suffers slight pain in the scrotum; the skin covering the upper part of the tumour is inflamed, and adhering to the parts beneath; the scrotum is enlarged by an œdematous swelling. Fever increased since yesterday, and the pulse more full and frequent. Took eighteen ounces of blood, which produced a disposition to syncope, and applied a blister to the scrotum.

28th. Passed a comfortable night, with little pain or fever, but complains of great prostration of strength, accompanied with nausea. The scrotum is greatly swelled, without any soreness to the touch.

29th. Free from pain; suffers occasional slight flashes of fever with nausea, and has had two or three bilious vomitings. Directed one grain of calomel every hour, with diluted wine whey.

30th. Five grains of calomel were given, which operated on the

bowels, and the stomach has been since composed. The wine whey has been omitted. He has neither pain nor fever, and the swelling appears stationary.

12th mo. 3d. Continues at ease, and without fever, and the scrotal tumour is rather less. His health and spirits have improved for the last three days, and his appetite is increasing.

In the evening I was informed that the tumour had burst, and was discharging profusely. On visiting him, I found a gangrenous opening on the anterior and inferior part of the tumour, from which about a quart of the most putrid and offensive pus had flowed. The reduced size of the scrotum now enabled me to trace the situation and extent of the hernial tumour with precision, and to pass a probe in all directions along its surface. A poultice of bread, made with a strong decoction of the root of *sophora tinctoria*, or wild indigo weed, was applied.

4th. This morning the opening was choked up by mortified cellular membrane, which was removed by freely dilating the orifice. By this means, the hernial sac was brought into distinct view. The poultice is continued, and the same kind of decoction used as a wash for the sore.

5th. The hernial sac is considerably distended, and by its thus pressing against the ring, occasions some uneasiness. Being in a mortified state, I opened it, and discharged a quantity of fetid air and bloody serum. On opening the sac, the contents of the hernia were brought distinctly into view, consisting of a convoluted mass of omentum firmly agglutinated together, and about the size already described.

Behind the omentum, and *within* the sac, there appeared a substance resembling the *unica albuginea* of the testis. All the contents of the hernial sac were in a mortified state. The sac and omentum had formed strong adhesions for two inches below the ring.

6th. The absorbents are beginning to separate the sac from its adhesions in the scrotum.

7th. On cutting into the putrid omentum, in order to remove the offensive mass, there was a slight flow of blood from the bottom of the incision, indicating some remaining vitality of the part. It was accordingly left till nature should mark out the line of separation.

8th. The absorbents are beginning to separate the mass of omentum *below* the ring. I removed a quantity of omentum with the testicle and their containing sac, in a putrid state.

10th. The action of the absorbents has enabled me to remove all the mortified parts except the spermatic cord, which lies behind a mammillated mass of omentum, which is left projecting about two inches below the ring, and still retains its vitality. The scrotum has contracted, and granulations are beginning to appear on the surface of the cavity.

18th. Granulation and cicatrization are going on kindly. The cord remains attached at the ring. The remaining portion of omentum is much reduced in size, and the surface is beginning to form granulations, but it does not possess sensibility.

22d. This day the vas deferens, the last remaining portion of the spermatic cord, came away. The cavity is nearly filled with healthy granulations. He has sat in his chair occasionally since the fifteenth, and to day walked out of his chamber without inconvenience.

31st. The sore is so far healed, that medical attention is no longer necessary.

During the inflammatory stage of the disease, and until after the bursting of the abscess, his nourishment consisted entirely of flour gruel, and buttermilk mixed with water. His bowels were moved every day by means of enemata. The most perfect rest was persevered in, and the feet of the bedstead constantly elevated during the treatment. This last means was *continued* in order to preserve the tender adhesions about the ring from injury, by the pressure of the abdominal viscera.

From a cautious dissection of the parts involved in the disease, and from the previous history of the case, it is proved, that the abdominal canal never closed after the descent of the testicle; and it is even rendered probable, that a portion of omentum was lodged in the scrotum at an early period of life. But it is not a little extraordinary that he should have followed a laborious occupation for thirty years, without suffering any inconvenience from such a state of things; and that he should have been unconscious of the descent of the bowel, and its after progress to the condition in which I have described it. The grand anomaly of the case however is, that strangulation, mortification, and consequent suppuration com-

menced, and proceeded through their several stages, without a single symptom which might be supposed to indicate such extensive mischief, while the parts concerned in the disease, were exempt from one moment of severe pain during its whole course.

ART. III. *Remarks on Hydrocyanic and Opium with reference to their counter-poisons.* By JOHN MURRAY, Esqr. F. L. S. M. W. S. &c.

(From the Edinburgh Philosophical Journal for July, 1822.)

IN June 1815, a paper of mine was read to the Linnæan Society, developing a simple and apparently decisive method of ascertaining the sedative virtues of vegetable juices and their counter-agents.

The sciatic nerves of the prepared frog were taken up by a silver probe, and moistened with the tincture, and the result indicated the sedative power or its obverse; the degree was determined by the specific gravity of the solution employed, and the power measured by the duration of the period required to produce its maximum effect.

It would be superfluous now to describe what has already been amply detailed. It was clearly proved from the result, that a suspension of the voltaic excitement, more or less decided, was the consequence of certain vegetable juices, and that in such as were operative in this manner, acetic acid was found to be a counter-agent.

It may be worthy of remark in this place, that discoveries have since manifested new alkaline bases, characterised by specific characters in such as having produced a sedative effect, were neutralised by acetic acid, as *morphia*, *atropia*, &c.

The following paper is intended simply to detail the result of some experiments, instituted with reference to the discovery of counter-poisons to their agency on the system. Facts are soon detailed; and it is not necessary that they be amplified or extended by unnecessary details. The truths gleaned from actual experiment are immutable, while the consequences which may be de-

duced in support of a theory, may soon be overlooked in the progression of intelligence.

I had always found, that the violent headach which sometimes occurred in preparing hydrocyanic or prussic acid, was relieved and removed by *ammonia*, which induced me to think that the antidote to that acid, and virulent and formidable poison, might be found in *ammonia*.

A small portion of hydrocyanic acid was given to a healthy young rabbit, which proved fatal in ten minutes. Soon after its administration, the head declined on one side, violent spasm supervened, while the eye lost its lustre, and the animal died in dreadful convulsions.

On dissection after death, the lobes of the lungs appeared paler than usual, coagulable lymph was found lining the trachea, as in *cynanche trachealis*, and the stomach was found inflamed near the pylorus. The brain was not examined.

The muscular fibre was still excitable by voltaic agency, but the excitability soon declined.

A drop or two of hydrocyanic acid on the head of a frog soon proved fatal. The colour promptly changed to an unwonted paleness.

The sciatic nerves of the prepared limbs were moistened with hydrocyanic acid, but no suspension of the voltaic excitement supervened. It was accompanied by a tremendous movement of the muscular fibre, connected with the lines of the nerves: and this spontaneous irritability seemed increased by the application of alcoholic solution of iodine.

It is a singular fact, that not unfrequently an alcoholic solution of iodine, dropped on the muscular fibre of a frog, excited phenomena similar to the action of the voltaic apparatus. It seemed also to renew excitability when the susceptibility had declined or was lost.

When the symptoms were verging to a fatal issue in a frog, a drop or two of *ammonia* on the head effectually restored the animal.

A greater quantity of hydrocyanic acid was given to a young rabbit than proved fatal in the cases detailed. *Ammonia* was occasionally applied to the mouth on a sponge. The animal exhibited no unhealthy symptom whatever.

A considerable quantity of hydrocyanate of *ammonia* with excess of base, was administered to another rabbit, but without an deleterious effect.

Half a drachm of hydrocyanic acid was given to a healthy young rabbit. The effects were prompt. Respiration became laborious and difficult, with a grating in the throat, the eye lost its brilliancy, the head dropped, it raised a sharp cry, and was convulsed. Strong ammonia was dropt into the animal's mouth, and it was repeatedly moistened with a sponge dipped into ammonia. It almost instantly revived, and even licked repeatedly the finger which sometimes applied the ammonia, apparently quite sensible of the instant and continued relief afforded. The animal effectually recovered. Its lips were excoriated by the ammonia.

Conscious of the complete antidote of this formidable poison found in ammonia, I took a quantity of hydrocyanic acid sufficient to produce violent headach, stupefaction, &c. but diluted ammonia afforded me instant relief. I occasionally applied it to the olfactory organs, and bathed the forehead.

Since hydrocyanic acid has been introduced into our pharmacopœia, and employed in phthisis pulmonalis, and accidenal poisoning may be anticipated, it is of much moment to know an effectual barrier to its virulence; and such is my complete conviction of the antidote, that I would feel no hesitation whatever in taking a quantity sufficient to *prove fatal*, provided there stood by a skilful hand to administer the remedy.

It is admitted that *morphia* is the active principle in opium. Morphia dissolved in alcohol, in which, however, it is sparingly soluble, produced on the sciatic nerves of a prepared dog, effects analogous to those of the tincture of opium. Acetic acid restored the voltaic excitability.

The sciatic nerves were moistened with superacetate of morphia, but the excitement was the same as if none had been applied.

A frog's head and abdominal viscera were steeped in superacetate of morphia, but the voltaic action remained unchanged.

Half a drachm of superacetate of morphia was given to a young rabbit, but no apparent derangement of its healthy functions took place; it rather seemed to act as a stimulus to the appetite.

These experiments pointed out *acetic acid* as the counter-poison to opium, and from its volatile properties and other characters, in which it differs almost essentially from *acetous acid*, having no affinity with it except in an acid character, and having much of the fea-

tures of an ether, I am of opinion acetic acid may prove serviceable where acetous acid would not prove effectual.

Two and a half drachms of tincture of opium were given to a rabbit. In a short time the eye became more opaque, the pupil dwindled to a mathematical point, and was insensible to the stimulus of light; the head fell to the floor, and the breathing was difficult and loud, and there supervened a fatal prostration of strength. *Acetic acid* was then administered through a quill, and applied to the mouth on a sponge repeatedly. The head was also bathed with acetic acid, and it was also applied to the extremities, and in the direction of the spine. The whole quantity of the acetic acid used was about a fluid ounce. The animal was also frequently roused, and finally kept warm. The animal effectually recovered.

These experiments were repeated with uniform success on other rabbits. Several days have elapsed, and they continue in the most healthy condition.

I much regret that these experiments have been so painful to me, as to cause for some time an interruption of my researches on *Hyoscyamus niger*, *Atropa belladonna*, *Cicuta virosa*, and other vegetable poisons; and nothing but the high importanee which might attach to the discovery of an antidote to their fatality, could have induced me to commence the inquiry.

I have no hesitation to pronounce my positive certainty, that in ammonia will be found a complete antidote to the hydrocyanic acid, and in acetic acid an effectual counter-poison to opium.

The agency of narcotic excitement holds out a method to discover the comparative sedative or narcotic properties of vegetable juices, as well as their counter-agents. It unfolds also those that are stimulating and those that are not, with their relative correctives. By this means, we are prepared by well grounded anticipation for the successful application of an antidote.

ART. IV. *A Sketch of the Botanical Literature of Croton Tiglium: being the substance of a Lecture delivered before the Medico-Botanical Society of London, December 3, 1821.* By JOHN FROST, Esq. Lecturer on Materia Medica.

(From the London Medical Repository for June, 1822.)

It has been observed with great truth, that "most of our *new discoveries* in the materia medica, have turned out to be no more than the revival and adaptations of ancient practices:" it becomes our duty, therefore, whenever a new medicine is introduced amongst us, to inquire into its history; and to discover, if possible, whether it has ever been popular in former times, or in other countries; and to learn from what causes it has fallen into neglect and disrepute.

Under these circumstances, I have now the honour of addressing you, on the *croton tiglium*; the expressed oil of the seed of which has lately excited much attention in this metropolis, on account of the peculiar properties which it possesses.

The first correct account we have of this plant is given in Jacob Bobart's* work, entitled *Plantarum Historia Oxoniensis Universalis*, published in the year 1649. His description is very explicit; and proves that he was well acquainted with the plant.

Baubin, in his *Pinax Theatri Botanici*, (published 1671) mentions it: as also does Ray, in his *Historia Plantarum* (published 1673); but the accounts in both these authors are not very perspicuous.

I shall shortly lay before you extracts (relating to *croton tiglium*) from the works of celebrated authors, viz. Linnæus, Rumphius, Rheede, Loureiro, Bergius, and Flemming; all of whom agree with respect to the medicinal qualities of this plant.

Before I proceed upon the botanical description of this species of croton, I beg leave to offer a few remarks on a recent publication, by Mr. Short, that has been sent to the lecturers on materia medica, &c. This paper exhibits two errors, that are so remarkably prominent, that they cannot be passed over without a repre-

* Jacob Bobart was principal gardener at Oxford. He died in the year 1679. æt. eighty-one.

hension. The first is the term *oil of croton*; this is an indefinite and an improper term.

Croton is a distinct genus, and contains *eighty-two species*; and consequently, according to Mr Short's nomenclature, (which I am sorry to say has been too generally adopted) the name *oil of croton* applies to *any* or the *whole* of the eighty-two species.

The second erroneous point is the term *most safe*. There is no doubt, that the true oil of the seeds of the *croton tiglium*, in the dose of three or four drops, would destroy life; but, at the same time, one drop, administered by an experienced medical practitioner, in cases where its use was indicated, would be productive of great advantage; yet the term *most safe* cannot belong to so powerful a medicine.

The *croton tiglium** is a native of the island of Ceylon; but it has also been found in Malabar, China, Cochinchina, and the Molucca islands. It is a small tree, seldom exceeding the height of ten feet; and is covered with smooth bark of a greyish colour. The root is much ramified; the branches are spreading; and the leaves pointed, serrated, nerved, alternate, and supported on long petioles. They are of an ovate figure, smooth, and of a dark green colour on their upper surfaces, and paler underneath. Both the male and female flowers are in racemes.

The male flowers consist each of a cylindrical calyx, that is five-toothed. The corolla consists of five petals, of a straw colour. There are from ten to fifteen stamina.

In the female flowers, the calyx is manycleft, and reflected under the capsule. There is no corolla; and there are three bifid styles.

The capsule is trilocular, ovate, coriaceous, and smooth. The partitions are very thin, almost membranaceous. Each loculus contains one seed. The seeds are convex on one side, and somewhat concave on the other: in point of colour, they vary from a light yellow to a brown. This tree flowers in August and September.† It belongs to

CLASS 21.—Monœcia.

Order VIII.—Monadelphia.

* The English term for *croton tiglium*, according to Mr. Aiton's *Epitome of the Hortus Kewensis*, is *purging croton*.

† The best drawings that have been made of *croton tiglium*, are in the possession of the Medico-Botanical Society.

Species — *Croton tiglium*.

Natural Order. — *Tricoccæ* Linnæus.

Natural Order. — *Euphorbi* Jussieu.

Synonyma. — *Ricinius Indicus*, foliis subrotundis, &c. *Hist. Plant. Oxon.* tom. ii. p. 349.

Pinus indica, nucleo purgante. — *Bauh. Pin.* p. 492.

Cadet avenacu. — *Rheed. Hort. Malab* tom. ii. p. 61.

Granum Molluccum. — *Rumph. Herb. Amboin.* tom. ii. p. 98.

Ricinoides Indica, folio lucido, fructu glabro. — *Burm. Fl. Zeyl.* p. 200. tab. 90.

The seed has been called Tilli Grana; grana Mollucca; Grana tiglia.

The seeds of this shrub, or the expressed oil of them, when taken internally, act as a very powerful hydragogue cathartic; and hypercatharsis is frequently produced. The truth of this circumstance is confirmed by all those authors who have written upon it, as well as by eminent practitioners of the present period.

The violent action which the oil produces may be diminished by conjoining it with an aromatic, particularly any of the volatile oils; viz. oleum, caryophyllorum, cinnamomi, pimentæ, &c.

Another mode of lessening its action is by roasting or baking the seeds previous to obtaining the oil from them. The vegetable acids (viz acetous, tartaric, and citric,) have been stated to moderate the violent effect of the oil of the seeds of the purging croton.

In cases where a very active cathartic is required, and where there are no symptoms to contraindicate its use, I have no doubt but the expressed oil of the semina tiglii will be productive of advantage, if administered with due caution.

In maniacal cases, its use has been attended with success; and Sir George Tuthill, one of the physicians to Bethlem Hospital, found beneficial effects result from its employment.

Dr. Pearson informed me, that he had used it in several cases with advantage. It has been asserted to have been useful in cases of tic douloureux; but I have not received a communication from any medical practitioner who had administered it in such cases.

I have seen instances in which the oleum seminum crotonis tiglii was applied to the tips of the fingers, for the purpose of ascertaining whether it produced any action. The result of the experiment was a sense of numbness in the fingers, hand, and arm, (but no

local inflammation,) dryness in the throat, thirst, and headach, which continued for several hours.*

When the oil is applied externally, it *generally* produces a great degree of local inflammation, which does not subside for many hours, and sometimes days.

The oil may be given in the dose of one drop, which, in particular cases, and under certain circumstances, may be augmented to two. The following formula is a good mode of exhibiting it:—

R Olei Expressi Seminum Crotonis, g^{tt} j.

Olei Caryophyllorum, g^{tt} j.

Confectionis Rosæ Gallicæ, gr. iv.

Misce, et sit pilula.

The natives of Ceylon (particularly the poorer class of people,) generally take one of the seeds for a dose. The wood of this shrub, which has been termed *lignum javanæ seu panavæ*, acts, in moderate doses, as a diaphoretic; but in large ones, as a hydragogue cathartic.

It appears, that no part of the *croton tiglium* has ever been inserted in the materia medica catalogue of any of the British Pharmacopœiæ, though it has in some foreign ones.

The semina tiglii are analogous in their operation, as well as in their form, to the seeds of the *jatropha multifida*, and the *jatropha curcas*. I understand that some persons have stated the grana tiglia, and the semina jatrophæ curcadis, to be synonymous terms. This opinion is a very incorrect one; and those persons who promulgated it are undoubtedly quite ignorant of the science of botany.

The following substances are similar in their operation to the oleum seminum tiglii, viz. the oil of the external covering of the seeds of the ricinis communis, or castor oil plant; and the extractum elaterii Pharmacopœiæ Londinensis.

The oleum seminum tiglii possesses all the characteristics of a fixed oil, e. g. is not miscible with water; and is converted into a saponaceous mass, by means of an alkali.

The use of this oil is contraindicated in all cases where inflam-

* The oil of tiglium at present on sale will not produce this effect, in consequence of the admixture of a great proportion of olive, or some other fixed oil. The oil used in the above experiment, was brought from Ceylon, and had not been in the hands of drug venders.

matory action is going on; and there is no doubt that much mischief arises from the administration of it in *any cases*, if given by persons who are not thoroughly acquainted with its properties, dose, &c.*

The remark of a well known author will justly apply when this medicine is in the hands of an inexperienced medical practitioner:—" *Medicamenta heroica in manu imperiti sunt uti gladius in dextrâ furiosi.*"

Having stated all the particulars I am acquainted with, respecting croton tiglium, I shall now proceed to call your attention to quotations on it from the authors whose names I mentioned in the early part of the lecture; and I shall begin with the description given by the celebrated Linnæus, who was the greatest botanist that the page of history records.

Extracts.—As nearly all the quotations are (originally) in Latin, I have selected a few of them for publication, and have rendered them into English, for the convenience of general readers.

1. "*Croton tiglium*.—The leaves are ovate, smooth, pointed, and serrated; and it has a woody stem. Its properties are emetic, drastic, and burning."—LINNÆI, *Materia Medica*, page 236.

2. "*Grænum Molluccum*.†—Women who wish to get rid of their husbands, give them four grains at one dose. If the seeds are thrown into ponds, they kill the fish."—RUMPHIUS, *Herb. Amboinense*.

3. "*Cadel Avenacu*.—The bruised leaves, taken in water, are purgative; and, if powdered and applied to the bite of the cobra-capelle, prove useful. One seed is taken as a purge."—RHEEDE, *Hortus Malabaricus*, tom. ii. page 62.

4. "*Croton tiglium*.—The properties of the seeds are purgative, emetic, emmenagogue, and very acrid."—LOUR, *Flor. Cochinchin.* p. 582.

5. "*Grana tiglii* are very rarely used by us, because they are too acrid. One of the seeds swallowed purges sufficiently. A larger dose generally purges upwards and downwards."—BERG. *Mat. Medica*, vol. ii. page 769.

* In a case where it had been resorted to by a person afflicted with rheumatism, without medical advice, a sudden metastasis of the disease to a vital organ was the consequence; and the individual died within three days.—EDIT.

† The name following the number, is that by which the croton tiglium is designated in the works from which the extracts are taken.

6. "*Croton tiglium*.—The seeds of this plant were formerly well known in Europe under the names of grana tiglia, and grana molucca. They were employed as hydragogue purgatives; but on account of the violence of their operation, they have been long banished from modern practice.

"For the same reason, they are seldom used by the Hindoo practitioners, though not unfrequently taken by the poorer classes of the natives.

"One seed is sufficient for a dose, being rubbed with a little rice gruel, or taken in a bit of plantain fruit."*—Dr. FLEMMING, in *Asiatic Researches*, vol. ii.

For a more full account of the properties, &c. of *croton tiglium*, I refer the reader to the following works, where a great deal of useful information will be found on this important plant:—

Plant. Hist. Oxon. Univ. tom. ii. p. 349.

Rumph. Herb. Amb. tom. iv. p. 98. tab. 42.

Rheede, Hort. Malab. tom. ii. p. 61.

Burm. Flor. Zeyl. p. 200.

Gærtner. de Sem. tom. ii. p. 119.

Loureiro, Flor. Cochin. p. 582.

Murray, Appar. Medicin. tom. iv. p. 150.

Bergii Mat. Med. tom. ii. p. 786.

ART. V. *Some Observations on the Origin, Nature, and Prevention of Typhus Fever.* By JOHN ARMSTRONG, M. D. &c.

(From the London Medical Intelligencer for May, 1822.)

As circumstances have occurred which will delay the publication of an advertised work which I have long been preparing for the press, and as typhus fever has again made its appearance in Ireland, it is incumbent upon me now to lay before the profession the result of my researches, in regard to the origin of that malady; and if the inferences, which I have most deliberately drawn from an extensive collection of facts, be correct on this important sub-

* The systematic name for the plantain tree is *musa paradisiaca*; it is a native of both Indies. There is a very fine one now growing in the Apothecaries' Garden at Chelsea.

ject, they will lead to clearer views respecting the real nature of typhus fever, and to more certain and efficacious means respecting its prevention.

In 1819, I attended a patient labouring under an intermittent fever, which, in its progress, put on a remittent character, and that again assumed the continued character, but with all the most malignant signs of what is usually denominated typhus fever. This case made a very deep impression upon my mind, and it then occurred to me, for the first time, that intermittent, remittent, and typhus fever, might, possibly, be modifications of one and the same disease, and that, possibly, the strong prejudice of education, and my own inherent pride, might have hitherto prevented me from investigating the primary source of this disease, with that simplicity and purity of mind, which the science of medicine requires. Up to this period, I had firmly believed, that human contagion was the sole cause of genuine typhus fever, but a doubt having been thus excited, I determined, if possible, to leave my mind free from all bias for the future, and then endeavoured to commence my inquiries respecting the origin of typhus fever, as if I had previously known nothing of the subject. Nearly three years have now elapsed, and within that term a very great number of cases of typhus fever has fallen under my observation, and I have spent much time in accurately recording their symptoms, and in endeavouring to deduce legitimate conclusions, not only from them, but from the various circumstances with which they were connected in their rise and progress. This investigation has most decidedly led me to the conclusion, that what the Italians vaguely call *mal aria*, and the English, as vaguely, *marsh effluvium*, is the primary source of typhus fever, and I will now state the substance of the facts upon which this proposition is so confidently advanced.

First, the intermittent, remittent, and what is called continued typhus fever, pass or repass, into each other, as numerous cases in my possession indisputably show; and, secondly, the remittent fever, from *mal aria* or *marsh effluvium*, has a combination of symptoms exactly similar to those which occur in continued typhus fever, and which, as a combination, occur in no two other affections whatever, so far as I have been able to ascertain from the most minute examination. But some remarks will be necessary fully to illustrate this particular and most important point.

The intermittent fever is marked by a successive cold, hot, and

sweating stage, followed by an intermission, and occurring again after a certain interval. All medical writers allow, that what is called the marsh remittent fever is a modification of the intermittent, though in the former, the cold stage is absent; and indeed, we so frequently see these affections exchange characters, as to leave no doubt on the subject. The relation between the remittent and the intermittent is not more intimate than the relation between the remittent and continued typhus; so that if I were now obliged to make a nosological arrangement, I should call the disease intermittent, remittent, or continued typhus, according to the type which it assumed. In tracing the history of many of the cases backward of remittent or continued typhus, I have found that they commenced as intermittents, and I have seen many cases of the remittent run into the continued typhus; and, on the contrary, I have known the continued typhus become remittent or intermittent. But though the continued, remittent, and intermittent forms of this disease constitute its leading varieties, yet each of these forms is occasionally liable to certain deviations in its course, which cannot be correctly arranged under any systematic divisions of the schools. But at present I shall not allude to these occasional aberrations, as my main object is to establish the identity of marsh remittent, and continued typhus fever, and therefore I shall examine each under the symptoms which they observe in their regular and unequivocal forms.

The remittent form, as it occurs in this country, is always attended by a simultaneous affection of the brain, mucous membrane of the air passages, mucous membrane of the alimentary canal, and of the liver; and this peculiar combination of symptoms is accompanied by as peculiar a lassitude of mind and loss of muscular power. The affection of the brain, among other signs, is denoted by a dropping of the upper eyelids, which, therefore, cover a larger portion of the globe of the eyes than natural; while the eye itself is more glary than in health, and yet it conveys an expression of dulness or indifference of mind, so that there is a remarkable mixture of physical brightness and intellectual muddiness in the expression of the countenance. It is difficult to convey this mixed expression in words, but any practitioner who has once seen it could hardly mistake it again. The affection of the lining of the air passages, is partly marked by some preternaturally purplish hue of the lips, attended with more or less huskiness of the voice,

more especially observable when the patient coughs; and the cough is usually slight or severe according to the degree of the affection of the lining of the respiratory passages. The affection of the mucous membrane of the bowels and of the liver, is generally marked by the evacuations from the bowels being mixed with glary mucus and dark bile, which often resembles brown melted resin. There is also frequently some obscure abdominal uneasiness on pressure, especially about the pit of the stomach. The tongue is covered by a dirty whitish fur in the centre, and its edges are usually redder than natural; but in the progress of the disease it often becomes brownish in the centre, and the breath, more particularly in cases of the continued type, has almost always a peculiarly sickly odour.

The lassitude of mind, and the prostration of strength, are closely connected with the state of the mucous membrane of the air passages and the affection of the brain; for the lassitude and langour are always the greatest in those cases where this combined affection is the most strongly indicated. This lassitude and langour are also remarkably indicated by the voice, manner, position, and motions of the patient. The remissions, when distinct, occur under two circumstances. The patient either becomes gradually or suddenly hot; and the hot paroxysm most frequently comes on towards evening, continues through the night, and terminates commonly towards the morning, the skin at that time becoming moist and moderately warm, or quite cool, but not moist; while the pulse in both instances becomes slower, softer, and of less volume than during the hot paroxysms. Now the only difference between the remittent fever and continued typhus fever is, that in the latter, as it appears in adults, the symptoms are more severe, and the remissions are entirely absent; the skin being hot or warm, and the pulse quicker than natural during the whole day and night, though even in that form, the pulse and heat are highest at the latter period.

The combined affections, then, of the brain, lining of the air passages, lining of the alimentary canal, and of the liver, together with a peculiar lassitude and langour, are the true diagnostic signs of the remittent, and continued forms of typhus fever. Other parts may be and sometimes are simultaneously affected, but, if we except the spinal cord, the affections of those parts are not essential, but accidental occurrences. The continued form of typhus in particular is liable to considerable variety in its expression, as the

disorder may predominate most in the brain, lining of the air passages, lining of the alimentary canal, or in the liver; but still an accurate observer cannot fail to recognise the disease from the coincidence of the above signs, though they may be slight or severe. The morbid appearances also are correspondent to the symptoms, for dissection in mortal cases shows the remains of some disorder in the circulation of the brain, lining of the air passages, and lining of the bowels, varying considerably in degree; but it is curious, that though the secretions of the liver are so generally disturbed during the progress of the disease, yet seldom any traces of organic mischief are exhibited in that organ. Certainly one of the most remarkable peculiarities of typhus, particularly under its continued form, is the affection of the mucous membrane of the bronchia; and I could show, from many facts, that it is the main cause of the varying degree of heat, of muscular and mental disturbance, and that it not only gives rise, in the advanced stages, to the peculiar dryness and darkness of the tongue, but that, it is connected intimately with those symptoms which have been termed malignant, and which the older writers found so difficult to explain on any thing like rational principles. The want of due decarbonization of the blood is the cause of many of the most remarkable symptoms attendant on typhus; but the degrees in which this process is impeded are not always proportionate to the degrees of mucus accumulated in the bronchial tubes, and spread over their lining; for in some instances the secretion on the tongue, and on the fauces, is a sort of sticky varnish, and this same secretion, seemingly, exists occasionally on the mucous membrane of the respiratory passages, when little mucus is, comparatively, accumulated there. Blood, not duly decarbonized, operates more or less as a narcotic on the brain, and tends materially to influence the animal heat and the heart's action: and hence partly arise, in the progress of strongly marked cases of typhus, the muddled state of the brain, the smothered heat of the surface, and the soft compressible pulse, which become its concomitants, however high the excitement may have been for the first three or four days.

It might be interesting to know, why in one person typhus assumes an intermittent, in another remittent, and in a third a continued character. Perhaps this may depend upon two circumstances; first, upon the degree of concentration in which the poisonous miasm is applied, and, secondly, upon the condition of

the body at the time of its application. If the miasm be applied in a low degree of concentration, or if it be applied to a subject whose internal organs are sound at the time, it seems to produce an intermittent fever; but if it be applied in a very concentrated form, or especially if it be applied to a subject whose internal organs are weak, then it puts on the remittent, or the continued character; for I have ascertained, beyond doubt, that the remittent and continued form of typhus are complicated with internal inflammation, separately or combinedly, in one or other of the four parts before specified, the inflammation being more intense in the continued than in the remittent typhus. Internal inflammation, then, is probably the immediate cause why typhus puts on the remittent, or continued character. In large towns, but particularly in London, the *mal aria*, or marsh effluvium, as it is too vaguely called, is probably applied in a much more concentrated state than in country districts, owing to the close, crowded, dirty, and ill-ventilated state of the habitations of the poor. The poor themselves in London, too, on account of their more dissipated habits, and the more anxious condition of their minds, have very often latent weaknesses about the internal organs:—hence, when they are exposed to the influence of this *mal aria*, or marsh effluvium, the subsequent shock most frequently gives rise to some visceral inflammation, and hence the disease so very often assumes the remittent or continued type in the metropolis; though I have facts to show that the intermittent form of the disease is more common than many practitioners imagine.

The only objection, which has struck me, to this view is, that the miasma which produces the intermittent form may be originally human, and not marsh miasma, because the ill-ventilated habitations of the poor will as certainly confine the effluvium of the human body as it will marsh miasma. But after the immense body of evidence which Dr. Bancroft has collected, to show that human effluvium, however concentrated, does not produce typhous or contagious fever, it seems much more philosophical to conclude, that it is the concentration of marsh, and not human miasma, which originally produces this disease. Besides, it is an important fact, that if the earth be bound up for some days by a hard frost, typhus fever ceases to exist in districts where it before prevailed, though the people are then as much, or even more crowded together,

which shows that something is necessary for the generation of the cause of this peculiar disease, different from human effluvium.

The intermittent form of the disease, too, arises in situations where there is no reason whatever for suspecting the existence of human contagion, as, for instance, in well-known places in various parts of England. The same remark as forcibly obtains in regard to the remittent form of the disease, which abounds in some places where the poisonous exhalation of the earth is known to prevail; and as the continued form of the disease is only an aggravated one of the remittent, as it has all its peculiar, pathognomonic, distinguishing signs, which do not, combinedly, exist in any other disease, the identity of the continued with the remittent form of the disease appears to me satisfactorily established.

It is, I know, a common opinion, that what is called, in general terms, fever, varies so much in its expression, that its characters cannot be delineated so as to present kindred and cognizable features; but all the observations which I have made respecting disease, lead me to the conclusion, that the same causes always present similar results under similar circumstances. Only, for example, ascertain the various forms which small-pox assumes, and the various circumstances under which those forms occur, and it will be found that they observe certain and regular laws. It is so with respect to all other diseases, but particularly so with respect to typhus fever, the symptoms of which are as strikingly uniform, in its leading varieties, as those which occur in small-pox, or in any other disease known to proceed from one specific source.

The effects of *mal aria*, when connected with fever, are, according to my observation, as uniform as the effects of the peculiar matter of small-pox, when that disease is connected with fever; and this identity of regular effects is as strong a presumption of the identity of the cause in the one as in the other. If it were taken for granted, by way of argument, that the peculiar matter of small-pox, like the peculiar matter of typhus, primarily arose from a source entirely external to the human body, it then might be urged, that as the former still produces the same regular effects when it has passed through one body to another, so something similar ought to occur in regard to *mal aria*, if that be the primary source, not only of intermittent and remittent, but of continued typhus fever. That *mal aria*, as a morbid exhalation of the soil, produces intermittent, remittent, and continued typhus, I have

abundant facts to show, which shall be given in detail at a future period; and as I have met with the distinctly remittent and continued form of the disease, in persons who had been, to all appearance, decidedly infected from others labouring under continued typhus, the parallel between small-pox and typhus would still seem to hold good, even under such a point of view. Since my attention, however, was fully awakened to the primary source of typhus fever, the unequivocal cases in which one patient appeared to me, unquestionably, to infect another, have not been very numerous, and if they had, I think it probable that some of them would have put on even the intermittent type, if I might form an opinion from what I have remarked of those cases which primarily arose from the *mal aria* of the soil.

Both the peculiar matter of *mal aria* and the peculiar matter of small-pox produce a greater diversity of symptoms than systematic writers have described, because the effects of both are influenced by circumstances which those writers have not taken into account, and which still afford an ample field for investigation; but I here only wish to reason from the more constant and regular effects of each, as they have been presented to me in this climate, since these effects are the most obvious, and, therefore, the best fitted for the purposes of the present exposition.

The causes of all acute diseases are common or peculiar; and if we accurately trace the effects of those which are peculiar, we may always select and arrange some which constantly arise from each peculiar cause, and which thus enable us to ascertain the existence and operation of that cause with great precision.

From the explanation which I have given of the origin of typhus fever, it is natural to inquire whether or not it be contagious. With respect to this circumstance, I also resolved to be entirely guided by the facts which came before me; for as soon as I satisfactorily discovered that I had formerly fallen into an error respecting the primary source of typhus fever, it became quite necessary to guard myself against that enthusiasm which so often makes converts pass from one extreme to the other. On mature reflection, however, I could not help perceiving, that what I formerly considered as decisive or probable proofs of the contagious nature of typhus, had not really the force which I then ascribed to them; for example, when I saw one person attacked with typhus who had visited another labouring under that disease, or when I saw person after per-

son attacked in the same house or situation, I imagined that this circumstance formed a strong, nay a decisive evidence, in favour of the disease propagating itself from person to person; but it must be apparent, from what has been said, that this particular circumstance meets with as satisfactory a solution on the principle that the persons thus affected had been, in their turn, exposed to the *mal aria* or marsh effluvium, by which the first had been affected. Indeed I have every reason to believe, that great numbers are actually affected in this manner who live in the same house or district, as the disease so often commences with the intermittent or remittent form; but, at the same time, it is right to confess that facts have fallen in my way which have led me to conclude, that the disease, under some circumstances, does propagate itself by contagion. Speaking from my own observation, I could not take upon me to say confidently, that the distinctly intermittent or remittent form are contagious; but I have met with cases, where the continued form of the disease, in which the secretions are the foulest, certainly appeared to propagate itself by contagion.

Among others which I could adduce, I will mention one instance for the sake of illustration. A very respectable woman, who performed the office of a nurse to some patients labouring under typhus, was assisting one of them from the night chair, and she became sick at the stomach, and faintish, from the offensive odour of the evacuation which he had just passed from the bowels. From that time she drooped, and a few days afterwards had a severe attack of continued typhus, characterized by its peculiar combination of symptoms. This is a striking instance, and I have met with some others which were equally, or even more striking. The probability is, that its contagious or non-contagious nature is dependent, first, upon the quantity, or concentration, of miasm thrown off from the body; and, secondly, upon the closeness or openness of the situation in which the patient may be placed; at least the result of my observations would go to prove that its propagation by contagion, or non-propagation, is almost entirely dependent upon surrounding circumstances.

Several cases have come before me which have appeared to me to identify the typhus fever of this country with the marsh remittent yellow fever of hot countries, where violent disputes have arisen about its nature, some contending that it is, and others that it is not contagious. But the disputants would do well to view the subject

more dispassionately, and to take into consideration the different types which the disease assumes, and, above all, the circumstances which favour or prevent the propagation of a disease by human contagion. In hot countries the secretions of the body are soon dissipated by the surrounding heat, and the modes in which the houses are constructed and ventilated are admirably adapted to prevent the spread of any contagious disease, even the small-pox; whereas, in this country, at least among the poor, their dwellings are so small and confined that they may be considered as nurseries of any contagion which may arise there, while the custom, not observed in hot countries, of having curtains about the beds, is calculated, first to retain, and then to give out, any contagion which might arise from the patient. These and similar circumstances ought all to be taken into account in estimating whether or not the marsh remittent of hot countries be a contagious disease.

There is an opinion very prevalent in this country, that any fever originating from a common cause, such as cold, heat, intemperance, or the like, may become contagious in its progress. This opinion has probably acquired all its force from the prejudice of education, for it has happened in physic, as in other departments of human knowledge, that men believe certain things merely because they have been taught to believe them; and it is too humiliating, in general, to acknowledge that as an error which has been long cherished as a truth. This feeling has greatly tended to impede the progress of my own mind, but I could wish, above all things, to weed out every vestige of prejudice or pride, that I might have no discolouring or distorting medium between me and nature; but that, on the contrary, I might be enabled to see things as they really are, and to investigate them in the spirit of sincerity.

It is truly and beautifully observed, by Dugald Stewart, that the impressions and associations of our earlier life may be likened to the slender threads which fastened Gulliver to the earth; and that they are to be overcome, not by a sudden exertion of intellectual force, but by the gradual effects of good education, in breaking them asunder one by one. In regard to the point in question, that any fever originating from a common cause may become contagious in its progress, I cannot but believe it to be a fallacy resting chiefly on the sanction of speculative authority on the one hand, and passive credulity on the other; at least, I have never seen any fever which

originated from a common cause become contagious in its progress.

If we attempt to draw our notions respecting the true diagnostic signs of typhus fever from the great medical sophist of modern times, Dr. Cullen, we shall be led into nothing but error; for his definitions of synocha, typhus, and synochus are, according to my observation, mere metaphysical abstractions, which have no reality in nature. What would seem to be meant by the word synocha is an intense fever, combined with some visceral inflammation; but inflammation did not suit Cullen's arrangement, and therefore the very essential upon which such a fever always depends, is omitted in what he has called a definition, but which, in fact, is only a brief and most imperfect enumeration of symptoms. What would seem to be meant by the word typhus, is that combination of symptoms which occurs toward the close of any fever where the brain has suffered much, and where the powers of life are about to give way; but this is not typhus fever, and indeed we find that Cullen's definition does not include one genuine characteristic of that disorder, if the epithet contagious be omitted; and its contagious character is probably dependent upon circumstances which are adverted to before.

The mischief of adhering to Cullen's supposed definition of typhus has not been confined to this, that many men have not known what the genuine indications of typhus are, but an unnecessary alarm has been created, lest any common fever may become typhus in its progress, since Cullen expressly makes typhus to arise out of another disease: but do we ever see figs spring from thistles? or, to speak more closely, do we ever see measles arise out of small-pox or scarlet fever? nay, did any man ever see true typhus propagated from any one of those diseases, even when they were accompanied with what Cullen has vaguely designated typhous, or typhoid fever?

If my observations be correct, it follows that typhus fever originates from one species of what is called *mal aria*, or marsh effluvium. The fact of intermittent, remittent, and continued typhus passing and repassing into each other, proves their common origin; and I infer, that this peculiar miasm is the sole cause of this disease, because I have never seen the combination of symptoms which it produces, in the remittent and continued forms, arise from any other cause. These symptoms I consider as pe-

culiarly characteristic as those which attend small-pox or measles, and I firmly believe, that they arise from as single a cause. Small-pox, measles, and scarlet fever appear in all the districts of London apparently alike; but typhus is most remarkably prevalent, year after year, in particular districts. The cause is, that typhus alone arises, primarily, from a *mal aria*, or marsh effluvium, which is most abundantly generated in those particular districts, where many, or even most of the poor inhabitants are rendered prone to its influence by a bodily debility, the product of bad food, pernicious habits, defective cleanliness, bad clothing, and the like enervating circumstances.

Whatever weakens the body predisposes it powerfully to typhus fever; and hence, during the prevalence of general distress among the poor, typhus fever will be sure to appear, provided the situation and season be favourable for the generation of *mal aria*, or marsh effluvium. So intimate is the connection between the state of the atmosphere, and the rise and decline of typhus fever in the infected districts of London, that I have often, with tolerable accuracy, predicted its increase or decrease in those districts; and I am sure that I could, in future, predict this with still greater precision, if I always knew the degrees of predisposition existing there, from physical and moral causes. In the course of some months, I shall have occasion to detail the whole facts in my possession, and then I shall offer what appears to me most interesting, respecting the circumstances under which this peculiar poison is generated.

This view of typhus fever not only leads to some important considerations respecting its prevention, but it is likewise calculated to remove that universal alarm which the unqualified doctrine of contagion always excites. If any man were to ask, why typhus fever prevails so much in some districts of London, and so very rarely appears, in solitary examples, among other districts, he will find a satisfactory answer to that question in the difference of localities; the infected districts being, in general, comparatively low, closely built, badly ventilated, imperfectly drained, and filthy, while the very contrast of this description mostly obtains in those districts which are freest from *mal aria*, and through which, as now constituted, typhus fever never has extensively prevailed, never can extensively prevail.

It has become the custom to establish fever institutions, and this

cannot be too much applauded and recommended; for such institutions afford the greatest benefits to the sufferers themselves, and protect the public, to some extent, by removing certain cases which might be propagated by contagion.—But if fever institutions be solely relied upon as preventives of the spread of typhus fever, they will necessarily lead to a very imperfect result, in as much as the primary source of the disease would then be disregarded; and it therefore follows, that the most important thing to be performed in the way of prevention, is first, to remove all those circumstances, as far as possibly can be done, which favour the generation of *mal aria*; and, secondly, to remove, in like manner, the predisposing causes among the poor, which lay them so open to the influence of this noxious agent, by debilitating their bodies.

The government of this country acts wisely in leaving most public institutions of a benevolent kind to the public; but as typhus fever not only regards the welfare of the individual, but of the community at large, it has a peculiar claim to the attention of the legislature; and I am so satisfied about the primary source of this disease, that I believe, if the legislature were to take up the consideration of the subject, on the grounds above suggested, the prevalence of typhus would be shortly lessened, not only in London, but in Ireland, or in any districts where it is wont to appear in the United Kingdom.

If *mal aria*, or marsh effluvium, be the primary source of typhus fever in London, it is probably the primary source of typhus fever all over the world.

In the present advanced, and still advancing, state of chemical science, it is not, perhaps, hoping too much, that something may be accomplished towards ascertaining the nature of this *mal aria*; at all events, by drawing the attention of scientific men towards it, many facts will be elicited which may prove highly useful, as far as the prevention of typhus is concerned.

Before closing these desultory remarks, I cannot help suggesting to those who may practise where the plague prevails, the propriety of ascertaining whether or not that disease be really a modification of typhus fever. Till the time of Procopius, the word plague seems to have been applied indiscriminately to any febrile disease which happened to be extensively prevalent; but since then, the best authorities seem to have limited the term to that fever in which buboes and carbuncles are apt to appear. Between

the most accredited histories which we have of the plague, and many of the symptoms of typhus fever, there is a most remarkable similitude ; but it is right in me to state here, that I have never seen, or, it may be, have never noticed, an instance of typhus fever where the glands of the groin were affected, though I have seen several in which the parotid glands were affected, and some in which carbuncles existed. But as I have never been in foreign countries, I can only recommend others to pursue the inquiry here suggested, and would wish it to be pursued strictly through the investigation of facts ; for the past annals of physic abundantly show, that the secrets of nature are not to be developed by any ingenious speculations carried on in the closet.

The discovery and communication of truths connected with physic, have been the leading objects of my professional life ; and being now fully persuaded that I formerly committed an error, in supposing human contagion to be the primary source of typhus fever, it becomes a duty in me to acknowledge that error without reservation. A certain degree of warmth, moisture, and the decomposition of vegetable matter, have appeared to me essential for the generation of *mal aria* ; and its suppression, or diminution, will perhaps be found chiefly to consist in establishing proper drains, in removing putrid accumulations of vegetable matter, in instituting every species of strict cleanliness, and in freely ventilating the habitations of the poor. The preceding view of the origin of typhus, would lead to important considerations in the future construction of the houses of the lower orders, but I shall enter fully into these hereafter ; and shall at present only observe, that whenever typhus fever does prevail, it will be important, not only to separate the sick from the healthy, but to remove, if possible, those physical and moral causes, which by debilitating the body, so powerfully predispose it to be acted upon by this noxious miasm.*

Southampton Row, Russell Square,
May 27, 1822.

* As some months will elapse before I shall be able to lay before the profession the detail of the evidence upon which the foregoing conclusions rest, in reference to *mal aria*, I should feel particularly obliged by the communication of any facts bearing at all upon the subject here discussed. The ascertainment of truth is my sole object ; and if I should, therefore, be favoured with any communications respecting the effects of *mal aria*, or human conta-

ART. VI. *A Case of Fungus Hematodes.* Communicated in a letter to DR. EBERLE, by GEO. M'CLELLAN, M. D. of Philadelphia.

DEAR SIR,

You have exhibited so much interest in the case of a patient whom you frequently visited with me, and have so often expressed your opinion respecting the importance of recording the circumstances which attended it, that I cannot refuse myself the gratification of complying with your wishes. Indeed, whether we consider the unsatisfactory state of our knowledge concerning the causes and nature of Fungus Hematodes, or the remarkable succession of symptoms which were developed in the disease of my patient, a history of his case will not prove uninteresting. Every species of morbid structure has excited the curiosity of surgeons; and although the pathology of no one has yet been fully elucidated, the method of treating most of them, has been unequivocally regulated. Respecting the management as well as the causes of fungus hematodes, however, we still remain undetermined; and it is questioned whether any benefit can be anticipated from the present resources of surgery.

I am informed that the authoritative opinion of Sir Astley Cooper has been pronounced against every kind of operation in cases of this disease, and this now appears to have become "the fashionable doctrine" among the members of our profession. The successful results, however, of several operations performed by Mr. Hey and others, offer some objection to the unreserved adoption of such a decision. I do not recollect how many can be brought forward in support of this objection, but a sufficient number have certainly been recorded to authorize the practice of removing the affected member in most cases of diseased extremities. Although, therefore, the termination of the case which I am about to relate, may appear to support the conclusions of Sir A. Cooper, the practice that was adopted cannot be considered as very reprehensible.

gion, I could wish that they might, if possible, be divested of all undue partiality or prejudice of mere opinion, so that they may tend, substantially, to support or oppose the inferences which I have put forth for the sake of promoting further inquiry.

But I will relate the facts as they were presented to me, before I indulge myself in a more particular examination of the prevailing doctrines respecting this appalling disease

In the month of November, 1819, I was consulted by Mr. Joseph Cline, of the Northern Liberties, for a large and very painful tumour, of eighteen months standing, on his left foot. He had been under the treatment of various empirics and physicians for nearly twelve months, during the greater part of which time he had been confined to his bed. He was extremely emaciated and haggard in his appearance; not being able to procure a moment's sleep without the free use of opium. His pulse was very quick and frequent, and he had severe hectic exacerbations every evening. Rubefacients, blisters, emollients, and many other topical remedies, had been successively applied to the affected part without affording any sensible relief; and the tumour, with all its constitutional effects, continued to increase in despite of every mode of treatment. He was then about twenty-four years old, and had been engaged in the laborious employment of manufacturing oak barrels for the shipping merchants. Until the period of his confinement, with the exception of a temporary irregularity of appetite and costiveness, he had apparently been healthy and robust; and it could not be ascertained that any constitutional affection had preceded the local disease. His appearance, however, was such as indicated a scrophulous diathesis,—his irises being very light coloured, pupils large, conjunctiva clear, skin delicate and flabby, glands of the throat and groin large, &c. But in addition to these more uncertain signs, several of his family were evidently affected with scrophulous swellings of the glands, and I have lately prescribed for a child of one of his sisters with the mesenteric disease.

The tumour occupied the situation of the metatarsal bone of the great toe. Its shape was that of an elliptical spheroid, with the longest axis corresponding to the shaft of the bone. Its shortest axis was about three inches in length; and its circumference was so large that it overlapped the adjacent metatarsal bone above and below, and projected inwards and downwards, to the bulk of a small infant's head. He ascribed its origin to a "snapping noise" and a "feeling of giving way," which he once experienced in the part while springing suddenly upon that foot; soon after which the bone began to swell, as he described it, in the centre. It did not acquire much size, however, or create serious alarm until after

four or five months, when, by displacing the tendons and nerves, and protruding them to a great degree of tension, severe lacerating pains began to be excited. Before that period, the only unpleasant sensation which he experienced was of a dull, aching kind, occasionally, in the centre of the bone itself. When he first applied to me he was afflicted with frequent and painful spasms of the foot and leg—produced, no doubt, by the irritation which the rapid distention of the tumour excited in the nerves.

On examining the part one eminent surgeon, with whom I immediately consulted, decided that it was a case of exostosis, and recommended the operation of removing the tumour from the metatarsal bone by means of a chisel and saw. Two other practitioners, however, whom I afterwards called in to examine the patient, agreed with me in considering it an osteo-sarcomatous affection, and insisted upon the propriety of commencing the operation with a view to extirpate, at once, the whole mass, together with the great toe and its metatarsal bone. Indeed, from every character of the part, I found no difficulty in assenting to the latter conclusion. For, although the whole substance below the integuments, tendons, and subjacent cellular tissue, felt hard and resistant as in cases of exostosis, the tumefaction was equally prominent on every surface, and the general appearance clearly indicated an unnatural deposition in the cancellated centre of the bone itself. On the 1st of December, 1819, I therefore performed the operation of removing the part in the following manner: an incision was commenced between the great and adjoining toe, and carried obliquely backwards over the tumour to the inner and posterior margin of the os naviculare. As the integuments appeared perfectly sound, it was necessary to remove only that portion which would have remained superabundant after the operation. A second incision, therefore, being commenced underneath the great toe at the beginning of the former, was carried backwards and inwards to the termination of the first, in such a manner as to include an oval portion of the skin, about two and an half inches broad, between the two incisions. The integuments were then dissected up above and below, and the tumour being separated from the adjacent parts, was removed by dividing the tendons of the muscles appropriated to the great toe and its metatarsal bone, and by disjuncting the articulation at the os naviculare. The most difficult part of the operation was encountered in separating the

tumour from the second metatarsal bone, which it considerably overlapped, although no little inconvenience was experienced in securing the numerous* enlarged blood-vessels, which bled very profusely. I do not recollect that I have attended any other operation which gave so much pain to the patient as this appeared to produce; every stroke of the knife having to divide parts rendered extremely irritable by the distention of the unyielding tumour. Directly after the operation, the flaps were brought together in a neat straight line, and retained in apposition by adhesive straps. At the first dressing afterwards, union by adhesive inflammation had taken place over nearly the whole surface; and in less than six weeks the parts had perfectly united. The only obstacle to the healing process, which appeared at the posterior angle of the incisions, was produced by a slight discharge of synovial fluid from the articulating surface of the os naviculare, and no doubt might have been prevented by scraping off the cartilage at the time of the operation. The patient soon regained his health and robust habits. The foot proved useful, and he walked about as before, with only a very slight impediment.

On examination, the tumour presented the following appearances. Externally it was invested by a thick stratum of condensed cellular tissue, in which the nerves, tendons, and muscular fibres, were imbedded and agglutinated by an exudation of tenacious yellowish lymph. By this covering of soft parts, the real bony tumour was not only concealed, but also enlarged in every direction, although chiefly in the longitudinal. When sawn open lengthwise, so as to divide it into two equal parts, it was found to consist of a very thin crust of bone externally, the cavity of which was occupied by delicate reticulated bony fibres, containing a pulpy sanies, or, as some would express it, a discoloured brain-like substance. Professor Pattison, for whose kind assistance on this occasion I must acknowledge myself indebted, retained the preparation in his possession, and I believe it is now deposited in his museum at Baltimore. It certainly bore all the characters of osteo-sarcoma, and every surgeon to whom it was afterwards exhibited, agreed without hesitation to consider it as a specimen of that disease.

The patient recovered so rapidly after this operation, and ap-

* One of the bystanders counted upwards of twenty ligatures, as I applied them to the divided arteries.

peared so free from every symptom of constitutional as well as local affection, that we all represented his case as successfully terminated. The event, however, did not prove so fortunate as we imagined; for early in the month of March 1821, little more than fifteen months after the operation, he called at my office for further advice. His appetite had then become very much impaired, and his bowels were obstinately constipated. Another tumour had also appeared on the surface of the metatarsal bone, adjoining the situation of the former, apparently originating, as the first tumour did, from a tumefaction of the substance of the bone itself. He had perceived its existence but a very short time before, and, as his family all declared it to be "the same sort of thing" for which he had suffered a terrible operation, his fears were greatly excited by the discovery. It had then acquired but very little bulk, having increased the apparent diameter of the second metatarsal bone, the middle of which it occupied, to not more than half an inch. It felt hard and bone-like to the touch, and occasionally excited the same dull aching sensation which he had experienced from the former tumour. The surface of the integuments in its vicinity was of a higher temperature than that of any other part of the body, the veins were also enlarged, and the pulsations of the anterior tibial artery were stronger than those of the opposite foot. Notwithstanding the specific character of the former tumour, I could not avoid, therefore, indulging the hope that by a rigid adherence to the antiphlogistic plan of treatment, the present affection might be subverted. All morbid actions are progressive, and probably commence with common inflammation, which, if promptly counteracted, will not invariably assume the specific dispositions that eventuate in organic derangement. Influenced by this opinion, I accordingly prescribed rest, with the affected limb in an elevated posture, low diet, leeching, and purgatives to be repeated every other day. On my succeeding visit I also abstracted nearly ℥ij. of blood from one of the veins of the ankle, and continued to enforce the antiphlogistic regimen. But notwithstanding these measures were actively pursued, I had the mortification to find from week to week, that the tumour continued regularly to increase. In less than six weeks, it had acquired a diameter of about two inches, and I was obliged to recommend amputation of the foot as the only resource. To this measure the friends of my patient were by no means prepared to consent; and as a physician in the neighbourhood had promised a complete cure

by means of an infallible plaster, they determined to resort to his specific. After having employed this and the numerous prescriptions of several other empirics, they finally returned to me, with the intention of submitting to my decision.

When I again saw him, on the 3d of June, 1821, he was almost precisely in the same condition in which I found him before the first operation. High constitutional irritation had supervened, and the tumour had made a rapid progress. A consultation with four of my brethren was, therefore, immediately called; and after some hesitation on the part of one of the gentlemen, it was unanimously agreed to resort to amputation of the leg.

The bulk of the tumour was at that time nearly as great as before the first operation, and to the sight it presented the same characters. It was more soft and yielding, however, so that two of the gentlemen who were present, declared that they could feel an obscure fluctuation. A small incision which had been made into its upper surface some days before by the lancet of a practitioner, remained open, and occasionally oozed out a quantity of sanious fluid. From these circumstances I was induced to suppose that the tumour, which at first appeared to be osseous, had progressed so far as to produce an entire absorption of the bony crust, and that it differed from the former in no other respect, than in being more fully developed. But my brethren were not all disposed to agree with me in this opinion. When they observed the yielding nature of the tumour imparting the sensation of an irregular fluctuation, and the thickness and slight discoloration of the integuments, at the same time that they adverted to its malignant character, they drew the conclusion that it was a case of fungus hematodes occurring in the soft parts exterior to the bone. The event proved that their idea was correct, and that I had been misled to form an erroneous judgment, either by its succeeding the former tumour, or by its outer investment of plantar fascia and condensed cellular tissue, giving it, in the first stage, the firmness of a bony substance.

The chief objection to the proposal of amputation, was drawn from the fact that one of the glands in the groin had become considerably enlarged. But as this had not acquired much magnitude, and did not exhibit any morbid disposition, the objection was easily overruled. The patient, however, was made acquainted with the circumstance, and the operation was proposed to him with every limitation which our uncertain prognosis required.

On the 7th of the same month, (June 1821,) I amputated the leg just below the insertion of the ligamentum patellæ, in presence of Drs. Hartshorne, Hewson, Parrish, Aitkin, and Mr. Anderson of New-York. This operation was performed with a circular incision; and in the dressing the integuments were brought together from side to side. At the first dressing, four days afterwards, the opposed surfaces were found united by adhesive inflammation, except at the angles where they were kept separated by small tents of linen. In a few days more the ligatures had come away, the adherent surfaces were consolidated, and the angles were granulating finely. The general health of the patient also was rapidly improving, and the prospect of ultimate success was altogether flattering.

On the 23d day after the operation, however, I was astonished with a message requiring my immediate attendance, and informing me that a secondary hæmorrhage had appeared. When I arrived at his house, he had lost nearly a pint of blood by a gradual oozing from the upper angle of the stump to which a firm coagulum was attached. On removing this coagulum, a small stream of blood was thrown out for an instant, although no bleeding orifice could be discovered. The discharge appeared to ooze away from the whole surface, and was evidently connected with a hæmorrhagic disposition of the stump. The patient, however, attributed it to a sudden motion of the limb which had taken place shortly before the hæmorrhage appeared. But the temperature of the thigh was so much elevated above that of every other portion of his body, and the articular arteries were so greatly enlarged, and pulsated so violently, that I could not ascribe the accident to any other than a constitutional cause.

By fixing the stump in an elevated posture, and enveloping it with cloths wrung out of cold lead-water, this discharge was easily restrained. One of my pupils watched with the patient the succeeding night, and rigidly enforced the cooling regimen, which was manifestly indicated by symptoms of high mental excitement as well as of febrile commotion. By this treatment, the pyrexial disposition was temporarily subdued, and no repetition of the hæmorrhage occurred during the ensuing day. In the second night afterwards, however, I was called out to witness a recurrence of the same unpleasant circumstance. The discharge had now proved much greater than before, and when I arrived, a tour-

niquet had been applied by a practitioner in the neighbourhood, without affording complete relief. On examining the stump, I found the cicatrized surface torn asunder, and the flaps almost entirely separated. As the blood appeared to ooze away from the exposed surface exactly as in the former hæmorrhage, I was induced to throw a quantity of powdered charcoal between the flaps for the purpose of exciting coagulation and contraction of the vessels. Cold cloths were afterwards thrown over the stump, and an elevated position maintained as before. Refrigerating medicines were also administered, and all the causes of irritation most carefully avoided. The febrile excitement continued so high, however, that it proved impossible to put a complete check to the hæmorrhage. During the succeeding forty-eight hours, the discharge occasionally recurred in such quantities as to reduce the patient to a most frightful state of exhaustion. At the end of that period, a huge dark coloured coagulum was found protruding from between the lips of the wound, which in a great degree restrained the further effusion of blood. Over this coagulum small drops of blood were occasionally observed to trickle, and its substance adhered so closely to the edges of the wound, that two of the gentlemen who assisted at the operation, were disposed to consider it a growth of malignant fungus. In consequence of the plausibility of this suspicion, I was led to request a meeting of the same surgeons who had before seen the patient with me. When we met in consultation, however, the coagulum had begun to separate itself from the surface of the wound, and to lose the characters of a specific affection. My treatment was, therefore, continued until the serous discharge which speedily followed was superseded by an incipient suppuration. The strength of the patient had by that time become so much exhausted, that I was obliged to administer tonics and a nutritive diet. Under this regimen the stump soon became clean and healthy, granulations sprouted up luxuriantly, and in less than three weeks the whole surface had firmly cicatrized.

I have been thus particular in describing the event of this amputation, because it is here frequently asserted that no operation should ever be performed for fungus hematodes, on account of a supposed disposition in the wound to assume the morbid train of actions which constituted the original disease. It will require but a moment's consideration to convince any rational man, that the

case which I have now related might, by a very slight inattention to the hæmorrhage, have terminated fatally, and thus have been ranked with the arguments in support of a doctrine against which it militates. Spontaneous hæmorrhage occurs from parts of a healthy structure, and in constitutions of most unimpaired vigour. The mucous membranes and the surface of almost every description of ulcers, are frequently affected with it, without any suspicion of morbid structure being entertained. That the face of a stump after an operation for fungus hematodes should, therefore, be liable, like all other wounds, to occasional discharges of blood, appears a self-evident proposition ; and considering that my patient encountered this inconvenience, his case, in one respect, offers a strong objection to the unfavourable opinion of operating for his disease.

I have already stated that the tumour for which this amputation was performed, proved to be a case of fungus hematodes. Directly after the operation it was laid open longitudinally by a scalpel. It was found to be composed of a variegated, ash-coloured substance, which felt greasy or brain-like to the touch. The first two remaining metatarsal bones were found embedded in the upper part of the mass. They were divested of their periosteum, and roughened, although not carious, on their inferior surfaces. Several discoloured, vascular spots were observed on the periosteum of the outer metatarsal bones, and on several of the tarsal, especially the cuneiform and navicular bones. Several small tubercles, somewhat resembling the cineritious portion of the brain, were also discovered in the cellular tissue which existed between the bones and tendons. No morbid appearance, however, could be detected at the ankle or above the joint ; and we had good reason to suppose that all the contaminated parts were removed.

The tumour in the groin at first appeared to be decreasing ; but in consequence of a sudden exposure to cold air, it subsequently increased to the size of a large goose egg. Under the use of hop fomentations and other emollients, however, it subsided considerably, and afterwards continued indolent and insensible.

In the fourth month after the amputation, my patient was walking about with one crutch and his wooden leg, and attending to the management of his workshop. He recovered his health perfectly, and appeared more robust and plethoric than ever. He continued in this state until the succeeding March, (nine months

after the amputation,) when he applied to me with every symptom of acute pneumonia. As he had been constantly passing from the heated stove-room in his house to the cold air of his shop, this affection was readily accounted for, and I treated it without any suspicion of its being connected with his former complaints. Soon after it had been relieved by active depletion, he again sent for me to prescribe for severe rheumatic pains in the left side of his neck and shoulder, which he supposed had been produced by a careless exposure in cold rainy weather. They, however, remained unmitigated under the most rigid treatment, and began to shoot downwards through the elbow and wrist so unremittingly, that I was induced to suspect the existence of a cardiac affection.

About the same period a proptosis of the left palpebra appeared in connection with a very dilated state of the pupil, and a remarkable paralysis of the left side of the face and head. This affection did not afterwards subside, and both sides of the head could no more be simultaneously thrown into a state of perspiration. A few days afterwards, my attention was called to a remarkable tumour which some one of the family had discovered while embrocating his shoulder. It was situated just above the humeral extremity of the clavicle, and appeared to be firmly attached to the transverse processes of the lower cervical vertebræ. It was deep-seated, and felt very hard as well as uncircumscribed. It increased rapidly, so that in a few days it not only displaced all the muscles on that side of the neck, but by progressing towards the axilla it elevated the clavicle and compressed the axillary vessels and nerves. A paralysis and tumefaction of the arm were in consequence produced, and the most excruciating pains continued in the shoulder.

About the same period a tumour began to form on the opposite arm between the tendons of the flexor muscles of the fingers. This proved indolent, however, and never acquired a size larger than a common walnut. In despite of every mode of depletion, the arterial system continued to be greatly excited. The pulse never beat below 120, during the remainder of his life, and always felt very hard and thrilling. The bowels were obstinately constipated, and daily required the administration of cathartics. A severe cough accompanied by a pain in the side, supervened a short time after the appearance of the tumour in the neck. By means of a caustic issue on the sternum this affection was entirely relieved, so

that for the last few weeks of his life, the poor fellow was not afflicted with the slightest symptom of pulmonic irritation.

Early in the month of April, he began to complain of a numbness in his inferior extremities, which gradually extended up to the thorax. A complete paralysis soon afterwards ensued, so that all the parts below the ribs became immovable.

On the 20th of May a retention of urine took place, which required the daily introduction of a catheter. Twelve days before his death, however, the bladder resumed its contractile powers, and afterwards evacuated the urine in a natural manner.

On the morning of the 22d of June last, he became delirious, and in the ensuing evening expired.

By a dissection, eighteen hours after death, the following facts were disclosed.

The tumour in the neck was filled with a pulpy brain-like substance, greasy to the touch, and variegated in its appearance by an intermixture of white and brown colours. Several small spiculæ of bone were interspersed through it, and the surface of every bone with which it lay in contact was carious. The lateral portions of the two lower cervical and the first dorsal vertebræ had been absorbed so that a considerable length of the spinal cord was exposed to the pressure of the tumour. The posterior half of the first rib had disappeared, and its carious extremity lay imbedded in the diseased structure. On opening the thorax the same mass was found extending into that cavity and adhering to the left lung. Another tumour, of an enormous size, was also found in the same side of the chest connected with the dorsal vertebræ and the inner surface of several of the ribs. It was at least six inches in diameter, and was covered externally by a reddish brown capsule of a thin texture. It was composed of a softer pulp than either of the former tumours, although it presented the same general characters. The ribs where protruded outwards by it, so as to form a considerable elevation on the back. Several smaller tumours of a like appearance were found attached to other parts of the same lung, and one was found occupying a similar situation in the opposite side of the chest. These were all covered by very delicate capsules, which yielded to the slightest force, and appeared to be reflected from the pleura. Their pulpy substance was lighter coloured than that of the large tumour, and strongly resembled the medullary portion of the brain.

A number of scrophulous tubercles were interspersed through the substance of both lungs; two of which being situated near the bifurcation of the bronchia were uncommonly large, irregular in their shape, and composed of an inspissated curd-like substance.

The cavity of the abdomen presented only one unnatural appearance. The omentum was found drawn up into folds, and studded with an immense number of tubercles of various sizes. Most of these were entirely composed of the white curd-like matter of scrophula. The others were more pulpy, and discoloured, resembling the cortical substance of the brain.

The tumour in the groin was extremely hard, and well circumscribed by a firm capsule of condensed cellular membrane. I did not lay it open at the time of the dissection, but left it in the hands of one of my pupils for the purpose of having it prepared for my museum. On examining the jar which contains it I have just found that all the exterior portion of its substance has been broken down into a soft, flocculent pulp; while the central nucleus remains firm like a cartilage. This circumstance however should not induce a suspicion of its being malignant in its nature. For the last six months preceding the death of the patient it remained entirely passive, and exhibited every mark of a common indolent tumour of the glands. When it was first dissected out from the groin it appeared to be a homogeneous mass, and the subsequent melting down of its substance arose from its having been carelessly thrown into a jar of dilute alcohol while enveloped by a piece of wrapping paper.

The symptoms of paralysis as connected with the lesion of the spine were somewhat interesting. A greater degree of nervous influence being required to excite muscular contraction than to transmit impressions to the sensorium, we should naturally be led to anticipate that in cases of palsy, the control over the organs of voluntary motion would be lost long before sensibility could be destroyed. Such, in fact, is the usual order of succession in the symptoms. In this instance, however, the power of deriving sensations from the contact of foreign bodies was first impaired. As branches of the same nerve that excites the muscles to contract, are distributed to the sentient surfaces of the leg, it will, in the present state of our knowledge, prove very difficult to explain how a certain degree of pressure above the origin of that nerve can destroy one of its faculties without affecting the other, except by resort-

ing to a supposition which this case appears to discredit. Equally incomprehensible is the fact, that the bladder of the same patient recovered its contractile powers a short time before death, while all the muscles of the trunk and inferior extremities continued in a state of complete paralysis. The symptoms of hemiplegia on the head and face were also interesting, inasmuch as they appeared in connection with the first stage of the tumour in the neck, long before any pressure could have been created in the spine. Several twigs from the cervical nerves being reflected upwards upon the cheek, it might be imagined that the tumour by compressing them gave origin to the palsy of the facial muscles; but no branches of these nerves having been traced to the height of the orbit, this supposition cannot explain the relaxation of the palpebra, or the paralysis of the muscular fibres of the iris. They must, therefore, be classed among those anomalous affections which pathology, in its present state of advancement, is not capable of elucidating.

As I have already exceeded the limits which this communication should have occupied, I cannot enter upon a full examination of the various medullary deposits, to which the general appellation of fungus hematodes has been applied. From the history of this case alone, it will be understood that a considerable diversity of character belongs to this species of morbid structure. The subject, therefore, will prove too extensive for my present engagement, and I must content myself with merely adverting to the more interesting particulars.

Respecting the various hypotheses which have been resorted to for the purpose of explaining the origin of this disease, it may be observed, as of most other partially investigated subjects, that the facts are too numerous and discrepant in their nature, to be embraced by any one theory. The late venerable Mr. Hey, who first designated the fungus hematodes, on observing the sudden and enormous development of a tumour which occurred in the thigh of one of his patients, was induced to suppose that it originated from the rupture of some blood-vessel, extravasating blood which soon became organized and assumed a morbid train of actions. From a subsequent examination of the diseased mass, he was also led to imagine that some lymphatic trunk had been ruptured along with the blood-vessel, and thus the lymph being commixed with the organized blood, produced the unctuous brain-like consistence of the tumour. This supposition was especially confirmed in his mind by

the fact, that the course of all the absorbent trunks in that limb lay through the affected part. But it still remains to be proved whether any combination of blood and lymph can possibly create an appearance similar to either of those which are presented by the different varieties of the disease under consideration. As well might we ascribe the formation of the brain itself, or the adipocere of the tombs to the same cause; for neither of them are more dissimilar to any compound of this kind, than is the matter of fungus hematodes.

Equally unfortunate for the same hypothesis is the fact, that the disease has frequently been found to originate where no lymphatic vessels have been discovered to exist. Several cases have been related of its occurring in the brain; one example of which I have lately had an opportunity of witnessing. The affection of the metatarsal bone of the great toe, described in the preceding case, also offers an objection to the same point. The last instance, however, bears more particularly against that part of the hypothesis which ascribes the origin of fungus hematodes to the rupture of a blood-vessel. For, notwithstanding my patient complained of a "snapping" sensation in the part a short time before the commencement of his disease, it will prove extremely difficult to conceive how any motion could have ruptured a vessel in the interior of the bone without at the same time dividing the solid substance itself. The gradual progress also which was not only observed in this, but has often been described in other cases, would seem to indicate some more progressive and less suddenly developed cause.

Still less tenable appears a more commonly received doctrine which has been derived from the opinions of the late ingenious Mr. Adams concerning the nature of carcinoma. It is well known, that in his treatise upon that subject, he ascribes the disease to a species of hydatid, which, originating in various parts of the body, assumes an independent existence, and a mode of action peculiar to itself. By a similar hypothesis, all the characters of a parasite are now attributed to fungus hematodes, and this offspring of a creative imagination, having acquired a dwelling-place in our bodies, is supposed to draw from every vessel unfailing supplies of blood. In turning over the pages of a medical lexicon, I was lately amused to find it asserted that the disease is produced by a living animal feeding on the juices of the part in which it happens to be located. But, not-

withstanding the hypothetical character of this speculation, there are not wanting facts to give it some appearance of plausibility. The favicular structure of the cells which occurs in some varieties of medullary growth, gives to the disease no remote resemblance to a collection of hydatids. The hæmorrhage in some malignant cases also, not corresponding to the pulsations of the heart, and not being restrained by the pressure of a tourniquet over the main artery of the limb, would seem to justify the belief of its proceeding from an independent circulation. Neither this kind of hæmorrhage, however, nor the honey-comb like appearance of the cells, occurs in connection with every instance of this disease. On the contrary, there is reason to believe, that in a great majority of cases, the structure is altogether homogeneous and unconfined in separate compartments; and that in many there is no unusual vascularity or disposition to hæmorrhage evinced. In neither of the diseased parts of the patient whose history I have just related, were there any such vascular pouches as could be construed into the most distant analogy with hydatids. The second tumour on the foot, also, which was a genuine specimen of fungus hematodes, and had been boldly opened by the lancet of one of my friends several days before the amputation, continued free from every other symptom of hæmorrhage than the trifling discharge of blood which immediately followed the incision, and was evidently derived from the general circulation.

But I need not fatigue you with a longer refutation of an hypothesis which cannot have received the sanction of your belief; nor will it be required of me to discuss the foundation of some other opinions which have been advanced concerning this disease. To assert, with their authors, that fungus hematodes depends upon a peculiar morbid disposition, or that it arises from a specific mode of action, will be indeed to advance what no one can deny; but such explanations afford no other satisfaction than the enunciation of the most common truism in different words. These phrases are mere abstract terms, which, like sympathy, may serve to veil the blank spaces of our knowledge from superficial minds, but which, as the representatives of unknown quantities in algebra, become insignificant when their real value is determined.

It appears to me, that fungus hematodes derives its origin from a depraved state of the constitution, which is too much neglected in practice, while we are almost exclusively devoting our attention

to the local disease. I will not undertake to describe the precise nature of this general affection, because the subject is not only incomprehensible, but also one, which, from that very circumstance, would require the employment of specious and unmeaning terms. It bears a close affinity to that state of the system which precedes and accompanies the development of scrofula; and may be induced in the same manner, by an irregular use of what have been called the non-naturals. Although no very conspicuous external marks of this derangement can be discovered, still I am convinced that by an attentive examination, we shall always be able to detect something wrong in the general state of health. In the three only cases which I have had a fair opportunity of investigating, the functions of the chylopoietic viscera were evidently disordered. In the first patient, a printer in Third street, whom I attended during the commencement of a sarcomatous testicle, and who afterwards died with a medullary deposition in the glands of the abdomen, there was an insatiable and morbid appetite, attended with foul breath and unnatural dejections. In the case of Mr. Cline, as I have already stated, the appetite was very irregular, and the bowels were obstinately disposed to constipation. The third instance above alluded to, is a patient now under my care with a variety of the same disease, whose tongue is constantly furred, and whose bowels are frequently affected with colic and diarrhœa. These symptoms were, probably, all dependent on a vitiated state of the hepatic and other abdominal secretions, and could not have been influenced by the local disease while in its early stage of development.

It is not easy to explain the circumstances which first disorder the secretory vessels of the digestive apparatus; and it is still more difficult to understand how such a derangement can affect other parts of the system, so as to produce in them a morbid growth of medullary substance. Such a connection, however, does appear to exist, although it may eventually prove that we cannot associate them as cause and effect. Perhaps several intermediate links in the chain of irregular actions may yet be discovered between the first constitutional impression and the ultimate production of malignant fungus. But the knowledge which we have already acquired is important in a practical point of view; and the surgeon who refuses to take into consideration the general state of his patient's health, has much to learn respecting the treatment of fungus hematodes.

ART. VII. *A singular case of Spasmodic Disease, simulating Hydrophobia.* Communicated by JOHN BARNES, M. D. of Philadelphia.

ON Thursday, the 8th of August, 1822, I was invited by my friend, Dr. Perkin, to visit with him a patient, then believed to be in the incipient state of hydrophobia.

The patient, John Wartonby, aged about twenty years, was apprentice to Mr. Rice, blacksmith, of the Northern Liberties.

The doctor observed that he had been bitten in the right arm seven weeks before, that he had seen him early in the morning, at which time he was unable to swallow fluids of any kind.

The doctor and myself visited him about ten o'clock, A. M. of the same day. I found him a robust young man, apparently full grown, and very muscular. His countenance presented a wild, unsettled aspect, indicating great mental anxiety; his pulse was full, tense, and frequent, and his skin hot, and dry. He complained greatly of the bitten part, owing to a blister plaster having been applied over it some hours before. We procured some water, and presenting the vessel, directed him to drink; he drew back from it with his countenance considerably distorted, declaring he could not drink; that the *smell* of the water smothered him. We insisted strongly on his making further attempts; when, taking the glass into his own hand, he carried it to the left side of his mouth, and took several swallows. We now urged him, with some degree of positiveness, to attempt to drink with the right side of his mouth; he did so, but the water had no sooner approached the right side of his mouth, than he drew back from it with a momentary general convulsion of the muscles of the right side of his face; he made several similar efforts, and they were all attended with the same results. We demanded the reason of his being able to drink with the left, and not with the right side of his mouth. He replied, that when the water came near his right nostril, it seemed to strangle him. At this time, convulsive tremours would commence about the neck and extend to the feet. This symptom occurred several times during our visit, which lasted about fifteen minutes. Believing the case, although a very peculiar one, to be hydrophobia, and considering it our duty to adopt, for the recovery of our patient, every measure which had been suggested for the cure of this disease, the family were di-

rected to procure a quantity of the scutellaria, or scullcap, and have a strong decoction of it prepared by the time of our next visit, which, we proposed, should take place at one o'clock, P. M.

About one o'clock we repeated our visit. Previously to going up stairs, the family mentioned, that when our patient looked in a looking-glass, it threw him into convulsions. Upon our entering his room, we procured a mirror, and insisted on his looking at the reflection of himself in it. At first he turned from the glass with disgust, and said he could not look at it; after some persuasion, however, he looked for some time, although with apparent reluctance.

Mr. Rice, the master of the young man, having communicated some facts in relation to the dog, which led us to doubt of his having been mad, we told our patient we were convinced that he could drink if he would, and that he must drink. Having persevered in an imperative tone, in language like this for some time, he made an effort to drink, and succeeded completely, swallowing with perfect ease several large draughts of water before our leaving him.

I saw him again about six o'clock, Dr. Perkin having been prevented from attending by other professional duties. Upon inquiry, I found that our patient had been drinking freely during the afternoon, both of water and the decoction of the scutellaria; his mind now appeared perfectly composed, and he was in a free perspiration from the quantity of different fluids which he had taken.

I visited him on the following day, about ten o'clock, A. M. and found him down stairs apparently well, and on the afternoon of the same day, he resumed his duties in the smithshop.

We ascertained, during the course of our attendance, that the bite to which this young man attributed his disease, had been received from a dog belonging to Mr. Rice, which had been greatly provoked by him; that the dog exhibited no symptoms of madness previously, and was permitted to run at large about his master's premises for upwards of a week after having inflicted the bite, in the same apparent state of health; when our patient, to gratify his vindictive feelings, took the dog a short distance from the city, and shot him.

Physicians have constantly contended, that many of the cases of hydrophobia which have been reported as successfully treated, were only cases of nervous or hysterical diseases, and that the patients

would have recovered without the use of the articles to which the recoveries have been ascribed. We think the history of the above case well calculated to establish this position, and we cannot but regard it as a fortunate circumstance, that the decoction of the scutellaria was not administered to the patient until after he had completely regained the power of drinking. The morbid phenomena exhibited in this case, evidently arose from mental agitation, which was overcome by our positive assurances of his capability of swallowing fluids.

In conclusion, I think it proper to remark, that we wish it to be distinctly understood, that in prescribing the scutellaria, we were not influenced by any confidence in the remedial powers of this article; but rather from a desire to fulfil every indication of cure, as we intended its administration should not prevent nor interfere with the employment of more efficient means.

ART. VIII. *Observations on the Internal use of Sugar of Lead in Dysentery.*

THE sugar of lead having of late attracted considerable attention from the profession as a remedy in several of the bowel affections, particularly dysentery; and from its being regarded in some measure as a novel and recent practice, we flatter ourselves that some notice of its introduction, &c. cannot but prove, at this time, interesting. There is about us a feeling which is constantly deluding us into the publication of what was known before. Discovering in the progress of our experience, that we have acquired information which we did not possess in the commencement of our practice, we are too often erroneously led to think that what is new to us must be new to the profession. In looking over the last number (of August 1822) of the Philadelphia Journal of the Medical and Physical Sciences, we were forcibly struck with the following notice relative to the internal use of this article in bowel affections. "By whom this practice was originated, we know not with certainty; it has been vaguely spoken of, and we suspect as loosely tried for many years among us. We have, however, rea-

son to believe that the credit of its introduction is due to Dr. Irvine of Charleston, South Carolina." We are at all times ready—nay, we rejoice when an opportunity is afforded us of noticing and recording discoveries and improvements of our countrymen, in whatever art or branch of science; but in this instance we are under the necessity of foregoing every claim, and of asserting that the introduction of Sach. Sat. into medical practice, is due neither to Dr. Irvine, nor to any other American physician. To be sure, Dr. Ewel of Washington City, has given us an account of the successful internal exhibition of the acetate of lead in several diseases, in hæmorrhagies, and in cases of salivation. He is also of opinion that it is worthy of trial in *dysentery*, at least after evacuants have been used. Medical and Physical Journal of London, v. 22. p. 350. Article Intelligence—for which he is quoted by the authors of the Dictionaire des Sciences Médicales, Article Dysentery, who thus comment on this opinion: "Cette proposition, qui décèle une ignorance complete des propriétés délétères de ce poison, est une vision si absurde, qu'elle ne nous paraît pas mériter une réfutation." We must confess we were much surprised at not finding, in this work, any further notice of *saccharum saturni*, an article that has been in use on the continent of Europe, in the very diseases in question, during a period of almost one hundred years; for Etmuller, as quoted by Dr. John Allen, an author well known to every scientific physician, in his Synopsis Medicinæ, vol. i. p. 296, after enumerating the various articles in use in the complaint, (Dysentery,) concludes by saying, "but above all, the *saccharum saturni*." At a period still nearer our own times, we have the testimony of Adair, by no means an obscure practitioner or an insignificant writer, in recommendation of it in the dysentery and colliquative diarrhœa, for which practice we find him cited by the celebrated Burdach. (Burdach's Arzneymittellehre, b. 2. s. 240.) Even Moseley recommends injections of the acetate of lead, to relieve the tormina and tenesmus, so distressing in the complaint. Still more recently, in an inaugural dissertation, "Circa Saturnum et Morbos Saturninos," and published at Berlin, in November, 1821, in which we have the following notices of its application in bowel affections, &c. "Metalli de quo agimus, usus in Dysenteria, hæmorrhagiis vituperandus," p. 53. Again, "Eodem modo plumbum in diarrhœa, dysentria, ut dolorifici tenesmi mitegarantur, adhibitum eos, autem usus omnino rejiciendus est," &c. &c. p. 55.

We have ourselves, in common with others, employed the acetate of lead in the bowel affections, and have hitherto had reason to be much satisfied with the results. Viewing it as a local antiphlogistic, we resorted to it without hesitation, in every stage of the disease, not solely in combination with opium as most usually prescribed, but by itself, that we might be enabled the more accurately to ascertain its specific effects in these diseases; and as far as we have had an opportunity of observation, we have not been able to discover any difference (thus exhibited, or when given in combination) in the rapidity or certainty of operation; but our more usual practice has been to exhibit it in doses of 4 grs. or more, in conjunction with an $\frac{1}{8}$ or $\frac{1}{2}$ gr. of opium to an adult, every two or three hours, according to the urgency of the case, interposing, occasionally, a purgative of castor oil. Its effects in removing pain and in relieving the tormina and tenesmus, were almost immediate. The only injurious result that has as yet presented itself to our notice, and which we have been induced to ascribe to its operation, has been a certain indescribable anxiety about the præcordia, which, however, in one case, soon disappeared under castor oil purgatives; but in this, we believe, we stand nearly alone in our experience. A much more serious objection has been urged, and which, if correct, must go far to lessen our confidence in it. It has been accused of producing a vomiting almost indomitable; that such an accident has occurred from its employment, we have no hesitation in believing; as far as we can learn, however, it is a rare occurrence, and may be attributed, in some measure, to a want of sufficient discrimination in its employment; for in many of these cases the gastric system is found excessively irritable. In the use of this article we would subjoin one caution, not to make use of any other than the crystallized salt in prescriptions, for the presence of carbonate, however small, may be attended with the most disagreeable consequences.

E. H.

ART. IX. *Cases illustrative of the good effects of Sugar of Lead in Dysentery.* Communicated by RICHARD HARLAN, M. D.

IN the summer of 1820, while prescribing in the Dispensary of this city, I employed the *saccharum saturni* in many cases of dysentery, and the result of my experience has convinced me that it is a safe and efficacious remedy in this disease. I have found it in the majority of cases, to check the bloody stools, to allay intestinal irritation, and to relieve, in a very prompt manner, tormina and tenesmus. It will be observed that I did not prescribe the sugar of lead by itself; and it may, therefore, be inferred that the remedies with which it was combined, had the principal share in the remediate effects of my practice. This may be so; nay, I believe that this was actually the case. But I am notwithstanding fully satisfied that the sugar of lead was of much service in the prescriptions I ordered; and this I infer from my having uniformly derived more advantage from my prescriptions when the sugar of lead was added, than when it was omitted.

The following cases are extracted from the prescription book of the Dispensary.

CASE 1. September 12th. James Roberts. This was a very severe case; the tormina and tenesmus were exceedingly great. The patient discharged a considerable quantity of blood. I saw him within the first twenty-four hours, and immediately ordered him the following prescription.

℞ Sacch. Saturn. gr. xviii.

Pulv. Opii. gr. vi.

M. ft. pulv. vi. One to be taken three times daily.

By the use of this medicine alone this patient was perfectly cured in three days. The tenesmus, tormina and bloody discharges were promptly relieved, and the cure was permanent.

CASE 2. September 29th. James Banfield. This patient had been affected with dysentery for eight days, when I first saw him. I immediately prescribed for him: ℞ Pulv. opii. gr. iss. P. ipecac. gr. ii. Cal. ppt. gr. vi. Sacch. saturn. gr. iv. ft. pulv.—to be taken at once. Every symptom very soon left him. In forty-eight hours after taking the medicine he had but one stool. I ordered him a dose of oil, which brought away two large stools of the consistence

and colour of rye mush. The patient recovered pretty soon, under the employment of calomel and ol. ricini.

CASE 3. October 2d. Brunson. Bloody stools, tormina, and much tenesmus. Ordered him R Cal. ppt. gr. xv. Sacch. saturn. gr. xii. M. ft. pulv. iii.—two to be taken daily. This patient was much relieved by the first doses of this prescription, and was soon perfectly cured by its use.

CASE 4. Ellen Lithgow, aged about sixty. This patient had been sick eight days before I saw her. She had profuse discharges of blood per anum, attended with much tormina and some tenesmus. These symptoms were immediately and completely removed by the two first doses of the following prescription. R Cal. ppt. gr. xii. Sacch. saturn. gr. ix. M. ft. pulv. iii. to be taken morning, noon and evening. The patient however sunk into a typhus state, from which she died without any dysenteric symptoms.

CASE 5. Mary Eglestone. Bloody stools, tenesmus, tormina. R Cal. ppt. gr. vi. Sacch. saturn. gr. iii. M. ft. ch. iii. to be taken morning, noon and evening. The patient recovered very speedily under the use of this remedy.

CASE 6. October 14th. George Howit. Dysentery, combined with phthisis pulmonalis. Has had bloody stools, with much tormina and tenesmus, for several days past. Ordered him, R Sacch. sat. gr. xii. Pulv. opii. gr. iii. to be dissolved in warm water, and administered as an enema. He is also to take one of the following powders three times daily. R cal. ppt. gr. xii. Sacch. saturn. gr. ix. Pulv. opii. gr. iii. M. ft. pulv. iii.—15th, was much relieved by these remedies. The patient declared that nothing gives him relief from his tormina and tenesmus but these powders. He has tried various other remedies, without advantage. Opium and laudanum always purged him. His bowel complaint subsided, but the affection of his breast returned.

CASE 7. John Cassery. This was the case of a lad about twelve years of age. He complained of much griping, and frequent bloody stools. R Cal. ppt. gr. xviii. P. opii. gr. iii. Sacch. saturn. gr. xii. Pulv. ipecac. gr. vi. M. ft. pulv. gr. vi.—take one of these powders three or four times daily. Under the use of this prescription, he was very speedily relieved entirely of his complaint.

In addition to these cases, which are copied by the house surgeon from the Dispensary books, I have used the sugar of lead repeatedly both in private and public practice, and always with unequi-

vocal advantage. I have never, in a single instance, observed any bad symptoms to follow its use.

It appears from the work of Jackson,* and Moseley,† that sugar of lead has been used, both in acute and chronic dysentery, in the West Indies. This I was not aware of until about to draw up these remarks. I believe, however, that this remedy was not used, in such large doses, with the same results, and to the same effect, previous to my having used it so very extensively and beneficially in the obstinate epidemic of 1820. I do not, indeed, know that the sugar of lead was ever used at all in the acute dysentery, in this city, previous to the summer of 1820. Whatever may be the origin of this practice, however, I am fully satisfied, that the sugar of lead properly administered is calculated to prove extensively useful in dysenteric affections.

I have lately read, in some of the Medical Journals, cases of colica pictonum successfully treated by the internal use of vinegar. As this disease is commonly produced by the white oxyde of lead, vinegar probably acts beneficially by converting the white oxyde into an acetate, in the stomach. I have administered the sugar of lead in colica pictonum, and found it to relieve the violent tormina, and irritation of the stomach. I have not, however, used it often enough to speak confidently as to its powers in this respect. I have known a patient to take \mathfrak{z} i. of the sugar of lead in hæmoptysis, and this dose was frequently repeated without inducing colic.

REMARKS.

We can by no means agree with our correspondent in recommending the sugar of lead in dysentery. We have given it in four or five cases, and in one of these its effects were unequivocally injurious. In this case, the discharges were speedily checked; but the patient, a child about two years old, was incessantly tormented by a painful pressing down of the bowels; much general distress was also experienced by the child, as was evident from the countenance, restlessness, and occasional screams.

As to the use of sugar of lead in colica pictonum, we have still less inclination to join in with our friend. We have seen many

* Jackson on Febrile Diseases. Vol. 2. p. 46—Ibid. p. 50—Ibid. 61.

† Moseley on Tropical Diseases, p. 404. 4th edition.

cases of this disease brought on by the accidental reception of the acetate of lead into the system;* and recently an alarming case occurred in a female under our care, to whom we had given large and frequent doses of this remedy to check a uterine hæmorrhage.

EDITORS.

ART. X. *A Case of Tic Doloureux, cured by Stramonium.* By
JOHN EBERLE, M. D.

IN July last, I was called to see a Miss Cresse, aged about 20 years, who had been for ten days suffering with the most excruciating pains in the right side of her face. The paroxysms of pain were sometimes so violent as to produce temporary loss of reason. She had been treated by a physician belonging to one of our public institutions previously to my seeing her, and had taken purgatives, barks, and opium, without obtaining the least relief. I prescribed the extract of stramonium, a grain of which was to be taken every four hours. She commenced with this in the evening; towards morning she had a considerable interval of comparative ease, and slept some. She continued the medicine during the succeeding day, and experienced less pain than she had done for eight days before. After the fourth dose was taken, she felt some vertigo; she was now directed to take the medicine only every six hours. During the second night she slept a good deal, and in the morning was almost entirely free from pain. The medicine was continued; on third night, she was not disturbed by her complaint; and continued well.

The stramonium is undoubtedly a medicine of great and valuable powers. In chronic rheumatism, I have employed it in several instances with the most unequivocal advantage. In sciatica also, I prescribed it in three cases, with complete success. We are chiefly indebted to Dr. Marcet for our knowledge of its efficacy in affections of this kind. "If I were called upon," says this writer, "to express in a few words the general opinion which I feel inclined to form from the opportunities I have had of studying the properties of stramonium, I should say that the most common effect of this remedy, when administered in appropriate doses, in cases of chronic disease attended with acute pain, is to lessen how-

* See Medical Recorder, vol. 1. p. 501.

erfully, and almost immediately, sensibility and pain; to occasion a sort of nervous shock, which is frequently attended with a momentary affection of the head and eyes, with a degree of nausea, and with phenomena resembling those that are produced by intoxication; to excite, in many instances, nervous sensations, which are referred to the œsophagus, or bronchiæ, or fauces, and which sometimes amount to a sense of suffocation; to have rather a relaxing than an astringent effect upon the frequency of the pulse, and to have but little immediate tendency to induce sleep, except from the state of comparative serenity and ease which generally follows the symptoms I have described.”*

ART. XI. *Observations on the efficacy of large draughts of warm Water in the cure of Intermittent Fever.* By JULIUS DEPPE.

TO DR. EBERLE.

SIR—In the beginning of the year 1821, I arrived in this country from Europe, and soon afterwards entered upon the continuation of my medical studies under the direction of my friend, Dr. F. A. Muhlenberg, of Lancaster. Dr. Muhlenberg and Dr. Carpenter were at that time the attending physicians to the Lancaster Alms-house Infirmary; and as the patients became very numerous towards the end of summer, I was requested to take the immediate charge of the sick, as resident house physician. In the beginning of October, we had upwards of sixty persons sick with intermittent fever in the hospital. The majority of these patients had already been sick for some months, and exhibited symptoms of visceral affections, such as indurations of the spleen, liver, &c. The remedies usually resorted to in such cases were at first diligently employed; but they were found wholly ineffectual, except in recent cases, where the biliary system had not yet suffered any organic lesions. Many of our patients were exceedingly ill. Being much perplexed, therefore, by the obstinacy of the disease, and the inefficiency of its most approved modes of treatment, I

* On the Medicinal Properties of Stramonium, &c. by A. Marcet, M. D. in the *Medico-Chirurgical Transactions*, vol. 6. part 2.

determined to try the plan of cure mentioned by Senac, namely, *very copious dilution with warm water*, and total abstinence from every kind of food. I accordingly directed many of the patients *to drink from four to eight quarts of warm water daily*, and kept them from every kind of nourishment for three or four days. This treatment had the desired effect; the visceral indurations; the sallow colour of the skin and eyes, and the brown fur on the tongue speedily disappeared. After they had been kept upon this treatment for three or four days, they were allowed barley water for diet, and were requested also to drink as much burdock (*arctium lappa*) tea as they could swallow. During convalescence, gentle tonic remedies were prescribed, and by this plan of treatment, all our patients with intermittent fever were soon well enough to leave the hospital. A few, after having been discharged as well, came back in two or three weeks with pains in the lower extremities, but which always readily yielded to the decot. sarsaparillæ.

ART. XII. *A Case of Pertussis or Hooping-cough, successfully treated by Nitrous Gas.* By JOHN D. THOMAS, M. D. of Philadelphia.

THE object of the present communication is not to entertain the medical public with any specious theory respecting this truly distressing disease; neither is it my design to enter into a pathological disquisition; I shall confine myself exclusively to the relation of facts as they actually occurred under my own immediate observation. I am well aware of the vulnerable ground upon which I stand in recommending a *methodus medendi* from the experience of but a single case, but I am emboldened to do it from having the corroborative testimony of my family, and some of my friends; among the latter, that of my respected and intelligent friend Dr. Alberti, who, seeing the distressing situation of my son, kindly placed in my hands J. Carmichael Smith's work upon nitrous vapour, in which I found some cases treated by this gas by Mr. Patterson. It is a familiar and humiliating fact, to which the experience of almost every practitioner of the healing art will testify, that the medicines usually prescribed in hooping-cough, do not merit the appellation of remedies; it will, therefore, be a source of incal-

culable satisfaction to the philanthropic mind, whether of the medical profession or not, to know that this scourge of infantile life, has been successfully treated, although it should be but in a single instance. Its importance is not derived from the circumstance of affording relief in one, two, or more cases, but from its introduction to the notice of physicians, that it may be more extensively tested, and if proved to merit the high character I entertain of it, widely diffused through every section of the globe, wherever subjects for its ravages may be found to dwell.

It will be perceived by my referring to the source from whence I derived my information, that I do not pretend to any originality in the remedy which I have brought before the medical public; I hope never to be guilty of plagiarism, so justly despised, but too frequently practised, and forsooth, by some who have been elevated to the highest seats in the temple of literary fame. If the nitrous vapour has been administered in this country in the disease in question, it has never come within my knowledge. I therefore hope I shall meet with indulgence, in the satisfactory belief, that I have been the means of introducing, what I with my present experience, esteem a valuable remedy in whooping-cough. I shall now proceed to detail the case upon which my opinion of the nitrous vapour is founded.

Francis C. Thomas, aged four years and five months, had been labouring under whooping-cough between two and three weeks, when I placed him under the fumigation plan. I confined him in his chamber, with every aperture, through which the gas might escape, closely stopped. I then placed a teacup in a sand-bath; half an ounce of sulphuric acid was poured into this cup, to which half an ounce of pulverised nitrate of potash was gradually added at such intervals, as to occupy the space of one hour each night, by which means the room was kept filled with nitrous vapour, and respired by my patient, without exciting a paroxysm of coughing; indeed, I particularly noticed, that during the process of decomposition, he was not seized with a single paroxysm, but he generally fell asleep in the early part of it.

July 30th. Last night I commenced the fumigation; during the night and to-day, could discover no change in the disease; neither in respiration, frequency, violence, duration of the paroxysm, nor expectoration.

31st. Cough evidently mitigated since last night's fumigation;

has had but three or four paroxysms to day, which appeared to be brought on by mental emotion; they were less violent and shorter in duration; expectoration much freer; respiration easy; appetite, which had been impaired, much improved.

August 1. Fumigated last night. Awoke but once; paroxysm light; hooping scarcely perceptible; during the day, evidently improved in every particular.

2d. Repeated the fumigation last night. No hooping during the night or to-day, and but little coughing.

3d. Patient much as yesterday. Repeated fumigations last night.

4th. Same process last night. To-day much better.

5th. Omitted fumigation. Rather more cough to day.

6th. Fumigated. Cough much better: no hooping since the first instant.

7th. Omitted last night the fumigation. No cough.

16th. In consequence of my patient being so well, the fumigation has been suspended since the 5th until last night, when it was repeated on account of a slight cough from cold, to which convalescents from this disease are peculiarly liable.

In the foregoing case, it appears evident to me, and I trust it will to all those who read it, that the *vis medicatrix naturæ* had no agency in relieving the patient. I am willing at all times to pay due homage to that power, but not at the expense of truth and justice; let us therefore "render unto Cæsar that which belongs to Cæsar," and not ascribe merit where none is due. If the future experience of other physicians should happily corroborate my present opinion of the efficacy of nitrous vapour in hooping-cough, I shall deem myself amply rewarded for having introduced so interesting a subject to their notice.

ART. XIII. *Annotationes de Conceptu.*

Ad JOANNEM EBERLE, M. D. Annalium Medicinæ, Editorem.

S. P. D.

Consuetudinis tuæ, Vir docte, tametsi gaudium non est mihi, verba pauca tibi afferre volo ut bonos contra mores, amico tuo, de novo, asperando, offendere evitam.

Sententia de conceptu physiologica, annalibus tuis antehac evulgata, mihi longe a meta aberravisse apparuit; præsertim quod multis in casibus, inapplicabilis et inefficiens, minimeque aliorum *analogia* animalium fulcita est. Casus quamvis illi sane abnormes proposuerim, inscius sum quare non mihi rogare liceat, "quomodo hos explicare poterit?" Naturæ *lusus*, si ad partium formas spectemus, absque dubio fuerunt. Rem profecto acu tetigit; nam si verum concessum est, mulieres gravidas factas fuisse, in quarum vagina membra virilia non intromissi potuissent, ac sine uteri labiorum amplexibus; scire utinam, qua procausa hos necessarios esse amplexos? *Conceptus* non abnormes erant veluti partium genitalium formæ tamen conceptus secuta est felix, ubi *nullo conamine*, penis glans uteri ad labia contingat. Huic addam, non omnibus hominibus, membra virilia æqualia constant; æque inter se longitudine ac crassitudine differunt. Quomodo posset hominem cujus est perbreve membrum patrem fieri, cui maximæ magnitudinis et longa prædita vagina est uxor? Nonne omnibus patet, homines patres fuisse, post glandem viro venereo exesam aut cultello chirurgico exsectam? A quo uteri in labiis *fibræ musculosæ* inventæ fuere? Amico docto tuo? Sensus compressionis, seu suctûs, vaginæ constrictore musculo, anique levatoribus oritur, tantum, credam; quia nisi musculis, nullæ parti corporis humani, *contractionis* vires insunt. Penis neque est glans unicuique sicce in modo constituta, ut ad amplectandum et sugendum apta. Multi quibus sunt glandes cuneiformes, membris perbrevibus gracilibusque junctis, qui nihilo secius proles feliciter gignunt. [Casus nuper duos vel tres legi, in quibus mulieres gravidatæ fuerunt, vaginis valde contractis non obstantibus. Inter alios unum "Diarii medicinæ Nova-Anglicani" ultimo numero invenies.]

Denique repetames "sententiam [Atlenanam] tantum inter cogitationes ingeniosas æstimari debet," et "rebus diurnis et com-

munibus" est contradictam. Huic addemus se principium mere petivisse quum sententiam suam secundum "leges naturæ firmatas" esse stabilitam, declarat.

Me posse, currente calamo, errare, perbene scio, et amico tuo per te, dicere velim si meos errores grammaticos et inveniet et mihi enunciabit, diligenter gratoque animo emendam. Interim, si de hoc negotio ille ad linguam Anglicam condescendere possit, meæ propensionis physiologicæ æque ac sermonis vernaculi mei, optima exemplaria eidare, libenter conabor.

De titulis tibi si non fastidiat, hæc dicam quum Opus "Nuncius Trimestris" dictum, susceptum fuit sine adjumento prospectûs, nominum subscriptorum vel pecuniæ receptæ, editor propositus, *medicis occidentalibus*, incognitus erat. Bibliopola dixit necessarium esse sibi aliquid in existimationis testimonio editoris, *publico* proferre, et dehinc secundum vota solum sua libro titulæ superimpositæ sunt. Amicis tui tituli vere mihi penitet, oblitus fuisse.

Tibi et conatibus causa scientiæ tuis, optimos felicissimosque eventus, omni cultu.

Vult

Ser^s. dev^s.

JOANNES D. GODMAN.

ART. XIV. *A Case of Periodical Discharge of a Sanguineous Fluid from the Vagina of a Child six years old.* Communicated by WILLIAM FORMAN, M. D. of Paradise, Lancaster County.

ON the 15th May, I was called upon to visit A—— R——, a little girl about six years old. Upon inquiry, her mother informed me, that some time in December, the child had been taken very unwell, complaining of a pain in her head and back, with considerable fever. This indisposition continued one or two days, and was relieved by a discharge of a reddish coloured fluid from the vagina, which lasted a day or two, and then disappeared.

The child in a short time afterwards was perfectly well, and again resumed its accustomed amusements. This lasted until about four weeks from the day on which the above symptoms appeared,

when she was again taken ill; she was, however, soon relieved by the discharge of a fluid, resembling in all its physical properties, the catamenia of the more advanced female. This menstrual discharge (if I may be allowed to call it so) lasted four days, when it disappeared, leaving the child for a short time in a languid and inactive state. These symptoms continued to visit her regularly every four weeks until April, at which time she suffered considerable pain without any discharge, and continued unwell until the next expected appearance of the menses, at which time her complaints suffered such a severe exacerbation, that her parents requested me to call and see her.

When I visited her, I found her complaining of a severe pain in the back and loins. Her bowels were costive; tongue much furred; tumid abdomen, and a frequent small pulse. I immediately gave her a dose of calomel and rhubarb, after the operation of which I directed her mother to give her ten drops of laudanum. On the next day, finding that the pain in her back still continued, I ordered her a warm bath and an injection of senna tea, to be followed by two tea-spoonfuls of spirits Mindereri every two hours.

On my next visit I found her much better, complaining only of a weakness in her back, the fever having entirely left her, but no appearance of the discharge.

Thinking it no longer necessary to continue my visits regularly, I gave her mother instructions to pay particular attention to her diet and the state of her bowels, and did not see her again until a week prior to the time another attack was expected.

I then left her a decoction of the polygala seneka, with directions to drink half a pint daily; this she did, and to my astonishment the discharge, though small in quantity, again appeared, accompanied with considerable pain in the back, and extending forward to the pubis.

Having removed to a considerable distance from the neighbourhood in which she resides, it has not been in my power to see her or even to hear satisfactorily from her since. All that I have been able to ascertain respecting her is, that she has again been very ill, but whether her indisposition resulted from a suppression of her discharge, or whether it ever in reality made its appearance or not, I cannot pretend to say.

The question is, how are we to account for this singular phenomenon? Can a hæmorrhage from the vagina or uterus observe

such strict regularity as this discharge did in its periods? If not, does it not seem to operate against the opinion that the chief end of menstruation is to give to the uterus an aptitude, and preserve it in a state fit for conception?

It is worthy of remark that there was nothing in the appearance of this girl which indicated such a wonderful precocity in the uterine system. Her breasts were not more prominent than those of other children at that age, and the parts of generation had nothing peculiar in their appearance. The only mark of distinction between her and other girls of the same age that I could discover, was the supercilia being much heavier and blacker than we are accustomed to see it in such young children.

ART. XV. *Observations on the Secale Cornutum, or Ergot; with Directions for its use in Parturition.* By JOHN STEARNS, M. D. of New-York.

WE have no information when the *secale cornutum*, or ergot, was first introduced into medicinal use. It may have experienced the vicissitudes of other medicines, whose alternate rise and fall, not being known to succeeding ages, have been repeatedly promulgated to the world as new discoveries. It has been recently supposed to have constituted the grand arcanum of a Dutch accoucheur in Holland, who, in 1747, acquired great fame for his success in obstetric practice. It was subsequently used in France, till it was interdicted by a legislative act, in 1774. Not being subjected to experimental tests, nor prescribed by scientific rules, it was probably exhibited in quantities, and at times, very unfavourable to its safety and success. The injurious effects of such vague practice, and the prevalent opinion that it possessed deleterious qualities, were the probable reasons that caused its rejection.

It was not till the year 1807, that the ergot ever appeared before the public in a form to arrest the attention of medical men. Some years previous to this, I was informed of the powerful effects produced by this article, in the hands of some ignorant Scotch women, in the county of Washington. Determined to try its efficacy, I procured a quantity from a field of rye. My information was

such as to impress upon my mind the necessity of extreme caution in my first experiments. The continued influence of this impression upon my subsequent practice, has been a source of much consoling reflection. It has tended to prevent those fatal errors which have so often occurred, and which, I trust, will be satisfactorily explained in the ensuing remarks.

The frequent recurrence of cases in my obstetric practice, afforded ample opportunities of executing my design to perfect satisfaction. I gave it in powder and decoction, but the superior efficacy and convenience of the latter, soon gave it the decided preference; and in no instance did I ever give more at a dose than ten grains; the ordinary quantity was much less. Its sudden and powerful operation upon the uterus, early taught me the necessity of those rules, which I subsequently published, and which experience has since amply confirmed. The publication of my letter to Dr. Akerly, in 1807, produced an immense number of applications from remote practitioners. I immediately forwarded to each samples of the ergot, with directions for its use. By these means it was sooner introduced into general practice than I anticipated. Its use was much extended in New-England, by the judicious dissertation of Dr. Prescott, read before the Massachusetts Medical Society, in 1813. The New-England Journal of Medicine and Surgery contained the opinions and experience of several practitioners in that section of country. While it met with general approbation and success, some ascribed to it the fatality of still-born children; and a few, probably influenced by the prejudices of the French, considered it deleterious. The latter opinion was supported by Dr. Mann, surgeon-general of the northern army, in a series of essays published in 1813, and intended to prove that the pneumonia typhodes, then prevalent in the country, derived its origin from this source. This was amply refuted by Dr. Henry S. Waterhouse, in a paper published in the New-England Journal.*

The same opinion has been reiterated in some periodical works, and inaugural dissertations, which the young authors imagined they had fortified by experiments upon insects. But it is not by such analogies that important principles in medicine are to be settled. We must refer to the human system as the only correct test for

* N. E. Journal, vol. 5. p. 235.

experiments of this sort. And here we find rash practitioners exhibiting the ergot by ounces, to the extent of a quarter of a pound, in less than twenty-four hours; and in some instances of amenorrhœa and illegitimate impregnation, it has been continued in large quantities for weeks and months, without producing any deleterious effects upon the females, or upon the fœtus in utero. The suggestion of its deleterious influence upon the child, when cautiously given in ordinary parturition, is undeserving of serious notice. Those who exhibit this article in such enormous quantities, and at times and under circumstances unfavourable to its success, and then proclaim it to be "fatal," or "inert," are influenced by other motives than a desire to elicit truth. Tried by such practice, opium, mercury, and antimony, would long since have been condemned and rejected from the *materia medica*, and the last was actually consigned to this fate, by the civil authorities of France, after its fatal effects had been *fully proved* by the bold empiricism of that day.

In the accounts which impute the death of still-born infants to the ergot, we do not find that minute detail of symptoms, of the quantities given, and of the times and circumstances of its exhibition, which are necessary to enable us to form a correct opinion of the propriety of the prescription. No one can hesitate to believe, that, under certain circumstances, such must be its inevitable effects. And I most sincerely admonish all those who experience such ill success, entirely to abandon its use. On no principle can a continuation of such practice be justified. I can, however, with much satisfaction affirm, that such has not been the result of my experience, and in no instance has either mother or child sustained any essential injury, which would not have been aggravated by its omission. These remarks are fortified by the testimony of many eminent accoucheurs, whose obstetric practice has been extensive, and most of whom have used it for the last fifteen years with the most complete success.* This discordance of opinion can be explained only by supposing a difference in the circumstances, modes, and times, of its exhibition.

It is important, however, to remark, that those cases which indicate the use of the ergot, would have proved hazardous to the

* N. E. Journal, *passim*. Med. Rep. 6 vol. N. S. p. 403. Drs. Prescott, Chapman, &c. &c.

life of the mother or child, and peculiarly distressing to both, if it had not been given. When, therefore, these unfavourable effects occur after its exhibition, they are very improperly attributed to the ergot, instead of their real cause, the intrinsic difficulty of the case. It is to prevent these, and to save life, that it ought ever to be prescribed. These effects I have often witnessed, and for this purpose has it frequently been administered by others with equal success. But never, I hope, will this, or any other recommendation of its utility, delude others into the use of it for any other purpose, or under any improper circumstances. If such, in any instance, has been the effect of the opinion that I published in 1807, "that it never produced any bad effects on the patient," I now solemnly retract it. Its bad effects have been too often asseverated to admit of a doubt. I did not then anticipate the abuses to which it has since been subjected. Should these continue, another legislative interdict would be extremely desirable.

To arrest the evil consequences of such practice, and to restrain the use of the ergot, I published in the 7th vol. of the *New-England Journal*, some plain and important rules, which I deem proper to subjoin, with explanatory remarks, and the addition of those cases in which its use is particularly indicated.

1. "It should never be administered where nature is competent to a safe delivery."

In elucidation of this rule it may be observed, that parturition is one continued process from beginning to end; one portion of which, like the links of a chain, necessarily precedes, in close connexion, that which follows, thus preparing in regular succession suitable changes in the parts concerned. If the interference of art interrupt this order of nature, the chain will be broken, and the whole process may be converted into a difficult labour.

2. "It should never be administered until the regular pains have ceased, or are ineffectual, and there is danger to be apprehended from delay."

3. "It should never be administered until the rigidity of the os tincæ has subsided, and a perfect relaxation induced."

I am aware, that in my first publication, I intimated that the success of the ergot probably arose from a nausea excited in the stomach, and thence affecting the uterus by sympathy, produced a correspondent relaxation in the rigid fibres of the os tincæ. Sub-

sequent experience has not justified this conclusion, and I have always found it necessary in such cases to premise copious bleeding.

4. "It should never be administered in the incipient stages of labour, nor until the os tinæ is dilated to the size of a dollar."

The success of the ergot is in no case more evident than in the selection of a suitable time of its exhibition. Although often given to procure abortion, it does not appear to have succeeded. It also generally fails of complete success when given in the early stage of labour, and before the os uteri is sufficiently dilated and relaxed. The pains induced under these circumstances, often terminate before the labour is fully accomplished. If it is delayed till these favourable changes are produced, its success in promoting the action of the uterus is more certain than tartrite of antimony upon the stomach, or jalap upon the intestines. But while an attentive observation of its effects, under different circumstances, in several hundred cases, have enabled me to predict its precise operation in almost every instance, I feel incompetent to explain why it fails in the one, or succeeds in the other. Its *modus operandi* is a desideratum, to harmonize conflicting opinions, to prevent, in all cases, its injurious effects, and to show why, under certain circumstances, it is inoperative, and under others, powerfully efficacious. Dr. B—— informed me, that he once gave it to a woman before any symptom of labour had appeared, to enable him to perform a journey which this case delayed. In one hour labour actually commenced, and regularly proceeded through its different stages to a safe and expeditious delivery. Had the presentation in this case been wrong, and other circumstances unfavourable, his premature prescription might have been fatal to both mother and child. I therefore seriously admonished him never to repeat it in a similar condition.

5. "It should never be administered in any case of preternatural presentation that will require the foetus to be turned."

The efficacy of the ergot is fully proved by the peculiarity of pains which it induces. From five to twenty minutes we first discover a bearing down effort of the patient. This gradually increases without the least intermission till the delivery is completed. During such an uninterrupted action of the uterus, all efforts to turn the foetus must be unavailing and hazardous.

6. "It should never be administered during the continuance of one labour, in larger quantities than thirty grains by decoction in

half a pint of water." A table spoonful of this given every ten minutes, generally succeeds better than a larger dose. While this quantity produces its most favourable effects upon the uterus, it does not affect the stomach with nausea or vomiting, which sometimes interrupts its successful operation.

Three grains, with a grain of opium, steeped in a gill of water, and a tea-spoonful given every ten minutes, have succeeded in reproducing the interrupted pains of regular labour. I have, therefore, generally preferred it in this form, as being perfectly safe, and exempt from the objections to the incessant forcing pains induced by larger doses.

By a due observance of these negative rules, it will be perceived, that but few cases can occur that will require the ergot; and for several years past I have not found it necessary to administer it oftener than in one for every thirty that I have attended. But so important do I consider it in certain cases, that I always have it ready for use on the occurrence of any emergent symptoms that may render it immediately necessary.

I will now proceed to consider those indications which render its exhibition necessary and important.

The ergot is indicated, and may be administered,

I. When, in lingering labours, the child has descended into the pelvis, the parts dilated and relaxed, the pains having ceased, or being too ineffectual to advance the labour, there is danger to be apprehended from delay, by exhaustion of strength and vital energy from hæmorrhage or other alarming symptoms.

II. When the pains are transferred from the uterus to other parts of the body, or to the whole muscular system, producing general puerperal convulsions.

After premising copious bleeding, the ergot concentrates all these misplaced labour-pains upon the uterus, which it soon restores to its appropriate action, and the convulsions immediately cease. A remarkable instance of its efficacy in these affections, is contained in a letter which I received from Dr. Henry S. Waterhouse, of Franklin county, and is too interesting to be omitted in this place.

"Mrs. L. H., of nervous temperament and delicate habit, aged 19, was, on the 24th of June, 1814, seized with the usual precursory symptoms of parturition. I found her affected with wandering pains of the back and abdomen, some throbbing pain of the

head, and a tense pulse, though natural in frequency. The loss of fifteen ounces of blood, with fomentations to the abdomen, and a dose of opium, gradually gave her relief, and at evening she fell into a quiet and refreshing sleep. The next morning I was sent for in haste, and was informed, that after a quiet night, she discovered in the morning some symptoms of derangement. She complained of wandering pains in the abdomen, and of a throbbing sensation in her head. These symptoms increased till the most horrid forms of puerperal convulsions was brought on, that I ever witnessed. She was constantly muttering things in the most incoherent manner; her eyes were rolling from side to side, and turning up in their sockets. She had so frequently bitten her tongue, that the blood was flowing profusely from her mouth; her extremities were of a deadly coldness, and the violent spasms and contractions of the muscles of her limbs, back, abdomen, neck, and lower jaw, were truly alarming. The pulse was natural, but less frequent than in health. With much difficulty, her lower extremities were immersed in warm water, and large quantities of the tinctures of opium and asafœtida were forced down. Her abdomen was fomented, and her extremities smartly embrocated with stimulating applications, &c. but all to no purpose. There was no hæmorrhage, but from the condition of my patient, it was impossible to make that accurate examination per vaginam that I wished. I could, however, ascertain that the os uteri was in a small degree dilated. The circumstances were so urgent that I could not defer the use of means till I could procure a consultation. Her strength was rapidly wasting, pulse small and frequent, breathing laborious, and countenance ghastly. The ergot presented itself to my mind as the only probable means of saving her life. I mixed thirty grains in a small quantity of warm water, and gradually insinuated a table spoonful between her teeth, worked it into her mouth, and in two or three minutes she had swallowed it. The effects were almost instantaneous and truly astonishing. Her spasms gave way, the operations of her mind became regular, and she awoke, as she supposed, from a disturbed and painful sleep. She complained of much weariness. A strong cup of tea was given her with some light nourishment, and she soon fell into a quiet sleep. In the evening following, true and forcible labour-pains came on, and I delivered her in a short time with perfect safety."

III. When in the early stages of pregnancy, abortion becomes inevitable, accompanied with profuse hæmorrhage and feeble uterine contractions.

IV. When the placenta is retained from a deficiency of contraction.

V. In patients liable to hæmorrhage immediately after delivery.

In such cases the ergot may be given as a preventive, a few minutes before the termination of the labour.

VI. When hæmorrhage or lochial discharges are too profuse immediately after delivery, and the uterus continues dilated and relaxed without any ability to contract.

I have thus exhibited a general view of the errors often committed in prescribing ergot, of the unfavourable results of such practice, of those cases in which it never ought to be administered, and of the indications which render its exhibition necessary and important. These remarks are derived from actual experience in several hundred cases, and are confirmed by those whose observations have been the most extensive and correct. While there is reason to suspect the influence of prejudice upon the minds of some who oppose its use, their own statements generally admit their very limited opportunities for witnessing its effects, and in some instances, while using it in their first experiments, on which their opinions were founded, that they grossly deviated from every direction calculated to ensure success.

While the frequent occurrence of such abuses is to be deplored, much satisfaction may be derived from this reflection, that a prudent and judicious use of this article has in a great variety of instances contributed to save the lives of the mother and child. That such will continue to be its effects when directed by a discreet, judicious, and experienced practitioner, we have the most satisfactory reason to infer from past experience, and from the peculiar properties and operation of the ergot.

ART. XVI. *An Account of a Case of a Water-melon seed lodged in the Trachea, in which the operation of Bronchotomy was successfully performed.* By DR. HORATIO G. JAMESON, Surgeon to the Baltimore Hospital.

ON the 2d of August, 1822, I was requested by Mr. S. Stevenson to visit his son, aged between four and five years, on account of his having gotten a water-melon seed into his windpipe. Mr. Stevenson having heard several opinions upon the case, carefully concealed the facts connected with it from me, in order that my opinion might be obtained uninfluenced by any other, as he has

since informed me. After arriving at the house, I was informed that owing to the indisposition of the family physician, and owing to the confusion which usually attends alarming accidents, several respectable gentlemen had seen the child. I was informed that nothing had been done for the child, although the accident had preceded my visit eight days, except the administration of ten drops of antimonial wine every two hours, at the instance of a gentleman whose surgical aid had been expected. This, I was informed, had been given with the intention of opening the skin.

I was solicited to prescribe for the child, then in a high fever, with incessant croupy cough. I objected taking concern in the case till an understanding might be had with the gentlemen who had had the charge of it. I was told that the surgeon who had been called in, had expressly stated that he would not call again unless sent for, and that he had not been there during the day—that it was their (the parents) decided wish, that I should take charge of the case in conjunction with Drs. Jennings and Cromwell, who had not had at that period any direction of the case.

When I came to exchange opinions with the gentlemen just named, there was a perfect agreement as to the necessity and propriety of an operation. It being understood that I should operate, I thought proper, for the satisfaction of the parents, to present a correct view of the case, so far as I could reason upon a subject enveloped in so much incertitude.

If the child has received a whole seed into the trachea, it could not descend below the first bifurcation, and in that case the probability will be greater of success than if he should have bitten a seed in two, and swallowed a part or an imperfect seed. Eight days having elapsed, there will be some risk of inflammation which now exists being increased, or, at least, it may run its course and prove fatal. Upon the whole, little is to be feared as to the success of an operation, but I might be disappointed; if so, you must be prepared to bear the disappointment on your part. From the use of any other plan of treatment we (the consultation) agree that little or nothing is to be expected. The fever present may be mitigated for a time by blood-letting, and full vomiting has sometimes succeeded in bringing up extraneous bodies lodged in the trachea.

This candid statement had the effect to excite doubts in the minds of the parents as to the propriety of an operation, since I could not assure them I could readily and certainly take away the

seed. They begged we would try every other expedient before resorting to the operation.

The child was bled, took several emetics, which had the effect of affording the most decided benefit. The vomitings, by bringing up great quantities of phlegm, relieved his cough and respiration so much as to encourage his parents to hope that this plan would ultimately succeed in relieving altogether. For three or four days, he would be free from almost any appearance of disease; then he would be threatened with strangulation, and severe and incessant cough would be excited, and continue till he was quite exhausted. Thus he continued upwards of three weeks after I saw him, to change from a state of extreme danger to one of apparent health, except his gradual loss of strength and flesh. After this period the vomits began to lose their beneficial effects, and ultimately evidently done him harm. The parents having resisted our advice respecting an operation, I gave them expressly to understand, that unless they consented to an operation, that I would no longer be responsible, nor would I be willing to perform an operation when no hope was left of saving him by the operation. I requested a final consultation with the gentlemen above named.

On the 31st of August we met, and agreed that as there was no chance of relieving him without an operation, that if the symptom should again remit and leave us a reasonable hope, which his situation on that day did not, that then the operation be promptly performed, or all idea of it abandoned for ever.

On the 2d day of September, one month after my first visit, and five weeks after the accident, I engaged in the operation. In the presence of Drs. Cromwell, Jennings, Wright, Dickson, and others, I made an incision about two inches in length, parallel with and in front of the trachea, terminating below near the sternum, and above about the middle of the thyroid cartilage. The integuments were much thicker than I expected; that part of the wound over the *rings* to be divided, was more than half an inch. Having completed my incision, I passed the point of the scalpel between the thyroid and cricoid cartilages, and cut downwards so as to form a wound through the rings of the trachea of about three fourths of an inch. Here it may be proper to notice some change of my views growing out of the circumstances present. I had provided myself with delicate forceps formed out of silver wire, hoping, that if I could not take hold with the forceps, that by turn-

ing the seed across the tube, I should enable the organs of respiration to throw it out of the wound or through the glottis, and I was not entirely at ease about a risk which I imagined there was of the seed being forcibly lodged in the glottis, and giving us some trouble.

The vessels divided by the knife, bled so freely, as to induce me to hope that I could derive advantage from this occurrence. I determined to open the wound for a short period, so as to admit blood into the trachea, with a view of forming coagula about the seed, or to stop up the trachea as much as possible, with a view of obtaining a more complete expelling power from the respiratory organs. Finding that my forceps were, though small, still too large for a space so confined as that deep between the sternum and the chin of a child, I resolved to trust to moving the seed, and irritating the lungs with a common probe, believing the coagula would materially facilitate my design. I was not aware that my probe had been taken out of my case, and there being none at hand, I passed down the forceps with their chops pressed together. The moment I touched the seed, and no doubt turned its flat side across the tube, which was somewhat choked with coagulated blood, it was thrown through the glottis as out of a pop-gun, in consequence of the irritation excited by touching the inner surface of the trachea at its bifurcation.

It was instantly perceived that the child was relieved of much of his sufferings, and so sensible was the dear little fellow of what had been done for his relief, that he lay perfectly quiet, and bore the introduction of three sutures without a struggle or complaint. And on the same afternoon he required restraint in regard to his eating, although his appetite had been greatly impaired during the whole of his indisposition. A slight symptomatic fever followed the operation, but there was very little cough, and that free from the peculiar croupy sound during the presence of the seed. The fever yielded to two or three mild cathartics. At this time, 19th Sept. the child is in fine health, but a slight sore remains at the wound, in consequence of the sutures giving way before the skin had united, but the trachea was closed up perfectly after the first afternoon, at which time a little air passed through the wound.

REMARKS.

It may be thought, upon a slight view, that I have been unnecessarily prolix in the detail of this case. But I think sufficient

Facts may be afforded to show that such accidents are not infrequent, and that the profession have not been much in the practice of affording relief by *operation*. Moreover, the surgeon who had charge of this case, previous to my being called in, declared that no operation could be performed with advantage! And a physician, who stands high here, told the mother a few days before the operation, that no operation was allowable.

Since the occurrence of the above case, I have heard from the most credible sources, that a child in this city, some years since, had a water-melon seed in its throat between four and five years, during which time it suffered greatly; and then, in the act of vomiting, threw it up—the seed unaltered. In another instance, it was thrown up five or six weeks after being in the trachea—the seed not changed, but the little sufferer was often in the most imminent danger of suffocation, to say nothing of the risk of inflammation. In a third instance of a similar accident, the child died after suffering greatly about four weeks. I also heard of two cases of the common white bean getting into the trachea, and producing suffocation. A son of James H. McCulloch, Esq. collector for the port of Baltimore, was lost by an extraneous body getting into the trachea, and producing sudden and unexpected suffocation. I have also been informed by a very respectable friend, that Dr. Emory had knowledge of a case which ended fatally, on the Eastern Shore of Maryland. In neither of these cases, nor several others of which I have heard, had there been any operation performed.

These cases are always extremely distressing, and if there were a strong probability of the extraneous body being brought up by coughing or vomiting some weeks after the accident, still the operation would be advisable with a view of relieving the patient from a situation so horrible and so perilous. Where the article is liable to swell, as beans or corn, the risk of suffocation is imminently great.

In a word, then, I would advise a speedy operation in all these cases. According to the urgency or otherwise of the case we might premise an emetic or two; but surely it is improper, where competent aid can be had, to defer the operation beyond a day or two, and in urgent cases it would be better to operate at once. It is a fact highly important to be known, that the operation may be performed safely and successfully after so long a period as five weeks.

This should encourage persons remote from surgical aid not to despair, since they would have an opportunity of carrying the patient to some surgeon willing to perform the operation.

I would also suggest that the surgeon should calculate principally upon the expelling power of the respiratory organs. In a small subject he will probably seldom succeed in taking hold of the extraneous body; so irritable is the inner surface of the trachea, that so soon as any hard body is passed down and comes into contact with the surface, there will be a powerful effort at expulsion.

Since the above operation, Dr. Harper of this city informed me that he has twice seen extraneous bodies removed by opening the trachea and passing in an eyed probe armed with a piece of sponge so as to block up the tube. The extraordinary effort of expulsion in both cases forced the substance through the wound.

My success on the same principle as that mentioned by Dr. Harper induces me to conclude that we shall succeed best by availing ourselves of the expelling powers of the organs interested.

A straight sharp-pointed bistouri should be used for cutting open the trachea. The cartilage is so yielding in a child that a scalpel does not enter conveniently. But the point of a bistouri may be passed in between the thyroid and cricoid cartilages with great facility, and the trachea opened as far as may be safe. The space is so short that there is some danger unless the child be safely held, of the knife's reaching the great crucial vein formed by the left jugular. This risk would be augmented if the incision were made during the act of inspiration. But after all, without great carelessness there can be no risk in the operation itself.

[The following interesting account of a similar operation to the one related above, has been recently published by WILLIAM I. HUNT, M. D. of England.* It furnishes additional evidence of the propriety and importance of the operation of bronchotomy in accidents of this kind. We have known the life of a patient sacrificed to the hesitating timidity of a surgeon in a similar case. Dr. JAMESON deserves great praise for his decision in the case of his patient. EDITORS.]

CHARLES HORNE, a boy four years old, with a short fat neck, on the day of the coronation, fell with several pebbles in his mouth. One of them was drawn into the rima glottidis, where it stuck,

* Medico-Chirurgical Transactions, vol. 12. part 1.

nearly occasioning suffocation. This was evented by a young lady, who, with great presence of mind, instantly introduced her finger into the child's mouth, and felt the stone, which she attempted to remove; but in the attempt it was forced into the trachea. In this state I found my patient, two hours after the accident. The child was so tranquil, and playing with his toys, with easy breathing, that I at first doubted whether the pebble was in the windpipe or not, until I made him cough, when its situation was too evident, from the convulsions and almost suffocation which it produced, attended with wheezing and rattling in the throat. The stone being small, it returned to the bottom of the trachea, after the coughing ceased; he was then restored from apparently instant suffocation to almost tranquil and easy breathing. *R Muc. gummi acaciæ ℥iss. Tinct. opii gtt. xx. Syr. simplicis ℥ij. M. f. mistura, capiat cochleare minimum sæpe, tussi urgente.* This mixture produced so good an effect in allaying the irritation and cough, that he passed a good night; and, in the morning when I visited him, no one could have imagined that any thing was lodged in the trachea. In the course of the day, the pebble was often forced up by the cough so near the grasp of the glottis, that there was frequent danger of suffocation. A consultation of my surgical brethren was summoned to consider the propriety of an operation, who all, unâ voce, recommended it to be performed, as the stone was now coughed up so often to the sensible glottis, that the internal membrane of the windpipe became inflamed, and there was a copious expectoration of yellow mucus.

With the assistance of the attending surgeons, I performed it in the following manner:—The child being laid on a table with his head hanging over it, and being firmly held by the assistants, I made an incision through the integuments, two inches and a half long, near the prominence of the thyroid cartilage. On dissecting down to the trachea, a considerable vessel was opened, which required the application of a ligature.

An incision, very little more than half an inch long, was made in the trachea, beginning from the first ring under the cricoid cartilage, when I most fortunately felt the pebble with the point of the knife, having fixed it with the fore finger of my left hand to prevent its being drawn out of reach by an inspiration. Mr. Budland, one of the attending surgeons, with a pair of forceps, easily extracted it; it was of the shape of a kidney-bean, half an inch

long, three-eighths of an inch wide, and a quarter of an inch thick. As soon as the wound was dressed, the child was put to bed, and directed to take the anodyne mixture as before.

Saturday, July 21.—Passed a good night, with very little cough, the breath passing occasionally through the aperture, especially when he coughed; pulse 120. The bowels being confined, an emollient injection was thrown up, which brought off some hardened fæces. At noon, pulse 140; his breathing quick and laborious, with convulsive twitchings of his hands and arms, and breathing constantly through the wound. I bled him *ad deliquium animi*, which gave him some relief. \mathcal{R} . Mannæ \mathfrak{z} j. Infus. sennæ \mathfrak{z} ss. Tinct. colchici gr. x. f. haustus tertiâ quâque horâ sumendus. Eight o'clock, P. M. the quickness of his breathing had now become stridulous, the cough and convulsive twitchings were more violent than at noon, with a pulse so rapid as scarcely to be counted, and with the additional symptom of tightness on the chest, showing that the inflammation had extended into his lungs. The aperient draught having as yet had no effect, the bleeding was repeated. I opened a vein on the back of his hand, near the wrist, immersing the hand and arm into warm water; it bled rapidly, until he again fainted, which gave instant and permanent relief for that night. Sterno emplastrum lyttæ amplum imponatur. \mathcal{R} Syrup Rhamni cathartic. \mathfrak{z} ij. Infus. sennæ \mathfrak{z} ij. Tinct. colchici gtt. xxx. —f. mistura capt. coch. largum, quartis horis, donec fluxerit alvus.

Sunday, 22d. nine in the morning.—Passed a very comfortable night; several copious offensive stools passed off about one o'clock in the morning, after taking the second dose of the mixture; pulse 130; still breathing through the aperture. Noon.—The dressings getting loose were removed, the lips of the wound were found in contact, but not adhering, on account of the frothy sputa being constantly forced through it at every expiration. Seven in the evening.—He has had two hours' quiet sleep, pulse 130.— \mathcal{R} . Tinct. digitalis.—Tinct. colchici aā gtt. xx.—Muc. gummi acaciæ.—Aquæ, aā \mathfrak{z} vj. Syr. rheados \mathfrak{z} i.—M. f. mistura, capt. quartam partem, quartis horis.

Monday, 23d.—Passed a tolerably quiet night; cough rather troublesome, the breathing more easy, no alvine discharge since yesterday morning.—Repetatur mistura aperiens, alvo dejecta, continuetur mistura ex tinct. colchici et digitalis heri præscript. Noon.—The wound was again dressed, the breath still passing

through it at each expiration; pulse 120: the bowels were relieved by two doses of the aperient mixture, the blister acted well, yet the breathing was rather more oppressive than in the morning; the child was restless and distressed. In the evening, pulse 130, and all his symptoms growing worse, a vein in the other hand was opened, and being immersed into warm water, bled well. I did not suffer it to bleed so long as to make the child quite faint, and therefore stopped it as soon as his lips became a little pale; this third bleeding had as good an effect as the two former ones, and was immediately succeeded by a copious purging stool.—*Continuetur mistura colchici et digitalis, quartis horis.*

Tuesday, 24th.—Passed a very good night, and is in every respect much better, but very weak; the air still passing through the aperture, and with violence, when he coughed. The mucus expectorated, became thick and yellow, the breathing was greatly relieved, and he seemed to cough without pain; the wound looked well —*Continuetur mistura e tinct. colchici et digitalis, et mistura aperiens pro re ratâ.* From this time to the 27th, there was no material alteration, but on this day the air ceased to pass through the wound: 28th, a more generous diet was allowed, he being much reduced by the repeated bleedings, &c.—*Omittantur medicamenta.* He progressively gained strength, and the wound nearly filled up, still having a trifling cough, with some expectoration. On the first of August, he was in a very bad temper, and crying violently; the edges of the wound again separated, but I was much pleased to find that no air passed through the wound, which soon after got into a healthy state, and is now quite cicatrized. The boy has a good appetite, and seems in every respect well.

Dartmouth, 13th August, 1821.

Observations on the preceding Case, by
HENRY EARL, Esq.

IN the course of last Autumn, I had an opportunity of seeing the subject of the preceding paper; and considering the case as one which deserved to be recorded, I requested the author to draw it up for the Society. It appeared to me to possess considerable interest in illustrating the different degrees of sensibility between

the larynx and the trachea; and in explaining, in a satisfactory manner, the great urgency of the symptoms, and the imminent danger which attends cynanche laryngea. As a valuable additional fact in support of the practice, which was so ably pursued, I felt anxious that the case should not be consigned to oblivion; more particularly as I am not aware of any analogous case published in this country.

In searching for information on this subject in foreign publications, I find many more instances of persons who were suffered to perish for want of timely assistance, either through the timidity and neglect of their medical advisers, or the ignorance and obstinacy of their friends and relatives, than of cases successfully treated. No less than seven fatal instances are recorded by M. Louis, in the excellent paper which he published on this subject in the memoirs of the French Academy, in which he so ably points out the propriety of performing the operation of tracheotomy, and shows with what facility and safety it may be performed. Other fatal instances are recorded in the same valuable collection of memoirs; and I have lately heard of three recent cases in this country, in which death was caused by the presence of foreign bodies in the trachea; in addition to the instance of the child who swallowed a portion of sealing-wax, an account of which was read to the Society at the close of the last session. In all these instances, sufficient time was allowed for the employment of the only rational and effectual means, but probangs, emetics and expectorants were resorted to, until a fatal termination was put to the sufferings of the individuals.

On the other hand, M. Pelletan, in his *Clinique Chirurgicale*, has related some successful and encouraging cases, in which he removed the foreign bodies, and rescued his patients from impending death. Rau, Heister, Verduc, and Engel, mention similar cases.

From the narratives of cases in which the operation was not performed, it would appear, in many instances, that the medical men and the friends of the patients have been deceived by the state of calm which so often succeeds, after a foreign body has passed the rima glottidis; which has induced them to draw very erroneous conclusions, and to doubt the presence of any thing in the trachea. This comparative tranquillity is however, most deceptive, and is certain, sooner or later, to be succeeded by serious and most dis-

troubling symptoms, which terminate fatally. Instances are on record, in which patients have survived months, and even years, with foreign bodies in the windpipe, which caused constant distressing cough, and purulent expectoration. In some of these cases, after great efforts, and a threatening of suffocation, the patients have succeeded in getting rid of the foreign bodies, but the diseased action which they produced has continued, and the patients have died with every symptom of pulmonary consumption. Interesting records of such cases will be found in Bartholin,* Tulpius,† Hechsteterus,‡ and Schurigius.§

That the operation of tracheotomy is the only effectual and rational mode of relieving persons with foreign substances in the windpipe, is a truth which cannot be too often inculcated; and it is not less true and important, that the operation should be performed as promptly as possible, before symptoms of irritation and inflammation have established themselves, which it may not be in our power to arrest, even by the removal of the exciting cause. If any additional arguments were required in support of the immediate adoption of the operation, as soon as it has been ascertained that any foreign body has passed into the windpipe, I would urge the consideration, that the patient's life is in the most imminent and constant danger, from the possibility of the substance being again forced, by any violent effort of coughing, into the rima glottidis, where it may cause almost instant death before any assistance can be afforded; of which occurrence numerous instances are recorded, and many more have, no doubt, taken place.

Apprehensions still exist, in the minds of some medical men, of the probable difficulty of cutting on the exact spot where the foreign substance may be. This opinion was advanced by Haller, and I have reason to believe that it is still entertained. With a view to dispel these doubts, it will perhaps be admissible to state briefly the experiments of M. Favier, related in the 14th volume of the memoirs of the French Academy, page 445. *et seq.* M. F. introduced irregularly shaped bodies through the rima glottidis into the trachea of a dog, and afterwards divided several rings of the trachea, when the foreign bodies were forcibly propelled by a

* Histor. Anatom. cent. ii. Hist. xxvii. and cent. vi. Hist. xv.

† Lib. ii. Obs. vii.

‡ Obs. Decad. vi. cap. x.

§ Chylologia Histor. Medic. cap. v. p. 85.

strong respiration. These experiments were several times repeated, with the animal in different positions, and always with the same results; from which, the author draws the following conclusion: that the fear of not being able to meet with the foreign bodies, ought not, on any occasion, to deter practitioners from operating, as they will, in all cases, be propelled through the wound in expiration.

These experiments are certainly very satisfactory; and no doubt, in the majority of cases, foreign bodies would be thus expelled, if the opening were made sufficiently large. The result of these trials likewise tends to diminish the apprehensions, which would naturally arise, from the introduction of any blood during an operation. Still, however, cases will occur in practice, in which this spontaneous expulsion cannot be depended upon. Pelletan relates two instances, in one of which, from the form of the body (the jaw bone of a mackerel), and in the other, from its situation (in the left ventricle of the larynx), the substances required to be extracted; which he performed, in both cases, with perfect success.

28, George-street, Hanover-square.

[We have excluded several original articles, in order to make room for the following highly important paper, of the celebrated JENNER. We are confident that our readers will be much gratified by the perusal of this interesting practical essay. EDITORS.]

ART. XVII. *A Letter to CHARLES HENRY PARRY, M. D. F. R. S. &c. &c. on the Influence of Artificial Eruptions, in certain Diseases incidental to the Human Body, with an Inquiry respecting the probable advantages to be derived from further Experiments.* By EDWARD JENNER, Esq. M. D. LL. D. F. R. S. M. N. I. F., &c. &c. and Physician extraordinary to the King. London, 1822.

MY DEAR CHARLES,

IN our conversations formerly, you must recollect my having frequently proposed, as a topic of consideration, what might be the influence of pustular eruptions artificially excited, in many diseases incidental to the human body. Permit me now, without further

preamble, to call your attention more particularly to this subject, by laying before you a series of Cases, which have passed under my own eye, and those of others, on whose testimony I could depend. The application I have selected for the purpose is the same, as you are aware, I had used some time before, Emetic Tartar. But though, by references, I find I could go back to the year 1794, yet my experience on this subject was confined within a boundary too narrow to enable me to bring forward facts, for public information, that were sufficiently interesting. You will excuse me if I amplify as I go along, by endeavouring to point out the physiological principles on which the application acts in destroying the roots which give birth to many diseased actions in the animal economy, in a way more manageable than any other at present developed.

CASE I.

Mr. ———, ætat. 60—Was first a seaman, but quitted his profession and settled in a neighbouring town more than twenty years ago. His general health has been good during this series of years, with the exception of occasional interruptions from what is termed sick headach. For the last two or three years his mind was strongly bent on a mechanical pursuit, and his expectations raised high on the result. Disappointment followed, which plunged him into a state of despondency, from the apprehension of poverty, although he possessed the most ample means. From this state of hypochondriasis he became more decidedly insane, and at the expiration of three months, a perfect maniac. The space of time from the accession of the malady to its becoming decided insanity, was about three months. He went through the ordinary routine of treatment in these cases, under a judicious medical gentleman in the same town, who reported to me the outline of the case, and that his bowels were then so torpid as scarcely to feel the effect of the most active cathartics; for example, he often took latterly, gr. xx. hyd. submur. and the same quantity of pulv. jalap, without any perceptible effect. He had been bled largely from the arm, and local bleedings by leeching and scarification had not been used sparingly. He also took nauseating doses of emetic tartar, but none of his symptoms yielded to this treatment. A physician, whose peculiar province it is to attend patients in this un-

happy situation, was now consulted, and a proper person sent from his asylum to superintend the patient. The prospect now became gloomy and alarming in the extreme, and I directed for him, with the view of arousing the peristaltic motion of the bowels, a strong solution of common salt, with a portion of mustard, to be thrown up in the form of clyster, but all our efforts to assist him in this way were unavailing, and it was supposed he must quickly perish. I was again consulted, and in this dilemma proposed to try the result of an application which would produce specific eruptions on the skin. A drachm of tartar emetic was involved in an ounce of simple cerate, and a portion of it was rubbed on the inside of the arms, night and morning, from the elbow joints to the wrist. Papulæ of some magnitude were produced, and a serous fluid began to be visible on their apices about the third day, when amendment became perceptible, and advanced so rapidly that the transition from derangement to health was almost inconceivable. Twelve months have now elapsed, and he has had no symptom of a return of the complaint.

CASE II.

—— C. Esq. ætat. 75,—Had lived freely, and was formerly the subject of carbuncular tumour between the scapulæ; his constitution is feeble from age, and the consequences of his previous habits of life. Some time ago he was seized with a severe attack of cholera morbus, from which he soon recovered, but his intellects became much confused, and his malady continued progressively increasing during the space of several weeks. The remedies usually resorted to were unavailing, when the medical practitioner, acting under my instructions, applied the tartar emetic ointment to the nape of the neck, and between the shoulders, avoiding the situation where the carbuncle had formed. The gentleman who communicated the result, states, that soon after the eruptions were produced, the patient rapidly regained that sane state of mind, which, as far as unconnected with age and natural decay of the faculties, he had formerly possessed.

CASE III.

EDWIN DAW, ætat. 17—A tall thin youth. His hair and eyes light, and his complexion fair. I was desired to see him, under

the impression, from the account given by his medical attendants, that his case was hopeless, as he was in the last stage of pulmonary consumption; and thus, apparently, I found him. His general hectic aspect, his state of emaciation, his occasional flushed cheek, his manner of breathing, the appearance and quantity of what he expectorated, the anasarcaous swelling of his legs and thighs, and even the inferior portion of the abdomen, a daily exacerbation of fever, a constantly quick pulse, and a florid tongue, corroborated this report. Superadded to this, it may be necessary to mention for your consideration, that in the course of the preceding fortnight there was a perceptible enlargement about the centre of the left side of the thorax, giving the appearance of a little protusion of two or three of the ribs, but which, on examination, afforded no correct information. It seems he had for some time taken the digitalis and other medicines held in most estimation under similar circumstances. I directed these to be continued, and only recommended the pulv. ipecac. comp. to be joined with the digitalis with the view of soothing the cough. At this period his debility was so much increased that he was confined wholly to his bed, and unable to change his position without the assistance of his father. To engage his mind, and not with the expectation of his ultimate recovery, the ointment was rubbed on the protuberant part until pustules were produced, which was effected within two or three days. Within a week I thought some amendment was evidently perceptible with regard to the cough and some other distressing symptoms, and the patient thought so too. The application was continued with the view, though somewhat painful in its effects, of keeping the pustules in full activity. At the expiration of a fortnight, perceptible absorption of the anasarcaous effusions had commenced; the general bad symptoms had considerably abated, and his looks were much improved. From this time his convalescence was rapidly accelerated, so that within six weeks no apparent vestige of the disease remained, and he began to renew his ordinary avocation of working with his father as a stone-cutter. As in the protuberance there was a deviation from ordinary consumption, it might be imagined that it was a formation of matter contained in a sac, which had spontaneously burst, and that the recovery might be attributed to salutary changes brought about in consequence; but I never found, during the progress of his recovery, any occurrence to warrant such a supposition. It

might indeed have escaped into the cavity of the thorax, but there were no symptoms of any such event. I can hardly conceive this to be a case of tuberculated consumption, though I never saw symptoms which so exactly accorded with the last stage of that disease. He continues free from any indisposition, and follows his employment with great ease, although he is a *little* devoted to ebriety, and, strange to tell you, after his recovery, he made his first grateful sacrifice not to Jove but BACCHUS. I have here represented the case as it existed, without wishing it to be inferred, that I deduce from it that the external application of tartar emetic will prove a remedy for tubercular consumption.*

CASE IV.

Mrs. H. of this place, ætat. about 54—Has been the subject of severe attacks of spasmodic asthma. She has used the ointment on the nape of the neck, since which the returns have been more slight, and the intervals between one attack and another more lengthened. The application was not extensive.

CASE V.

Samuel Harris, ætat. 47, Mariner—Was suddenly seized, about the end of January, with inflammation of the right eye. It was not so violent as to prevent the pursuit of his employment for nearly three weeks, when a chill came on daily between three and four o'clock. About half an hour after each attack, a pain seized the right side of the head, principally about the orbit of the eye, extending in the course of the temporal muscle. It continued to return every afternoon at a certain hour, and at length became so violent as to deprive him of sight and intellect. In one of the paroxysms he grew enraged with his wife, because he supposed that she had not lit him a candle, although one was burning before him. These periodical attacks became marked in the end with raving madness. In a paroxysm, with extreme severity of pain, he was at the point of destroying one of his children. He was

* It will appear elsewhere that I have considered the *hydatid* as the source of tubercle, and consequently as giving birth to those tubercles which destroy the lungs in true phthisis pulmonalis. From the vague and unsubstantial opinions lately given by various authors, one would suppose that the luminous work of my friend Doctor Baron on this interesting subject, had never appeared.

bled from the arm, leeches, and took purgatives up to drastics, but they took no effect upon the malady. Seeing the impression which tartar emetic had made on affections, connected with a disordered state of the brain and nerves, I did not hesitate to direct the application of the ointment, and it was applied to the left arm. Pimples followed in twenty-four hours, and as soon as they became acuminated, and *contained a little limpid fluid*, the patient found ease; the pain continued to abate, and at the end of *three days it was quite gone*. He continues well. This man, like many others who ply as mariners on our river (the Severn), was a hard drinker.

CASE VI.

Zeb Selman, ætat. 12.—He had been ill for six months with the symptoms of that disease which is termed chronic hepatitis. His liver felt generally enlarged, very much indurated, and sensible to the touch. He was seen at an advanced period of the complaint by a physician of acknowledged high abilities. This gentleman is reported by the patient's friends to have said, that if he had seen him at the commencement of the disease, the chances would have been *seven to one* against him, and now would be *ten to one*. The cachectic appearance and general emaciation were certainly such as indicated the probability of a fatal termination, and, if I had given an opinion, it would perhaps have been similar. At this period of the progress of the complaint the ointment was applied with the usual cutaneous effect; after which he recovered with astonishing rapidity, and no vestige of the induration or enlargement within the abdomen remains. Mild aperients, which he had been in the habit of taking, were used during his indisposition.

CASE VII.

John Everett, ætat. 21, with light hair and thin delicate skin.—He exerted himself very much in harvest work, and drinking beer after a day of hard employment, was seized with a pain shooting from the diaphragm obliquely upwards to the left side, near to the region of the heart, particularly exasperated by casual motions or jarring of the trunk. He described these pains or spasms by the common phrase of "*stitches in the side*." Together with these symptoms he had spasm of the œsophagus in swallowing food, which rendered its passage painful and difficult. He also com-

plained of difficulty of respiration, and deep-seated pain in the head. His pulse was quick, and his tongue discoloured. Though every evidence existed of a disordered state of the digestive and respiratory organs, and of the functions of the brain, yet it did not appear that the secretions were much deranged. In this condition his legs became covered with a spontaneous eruption, consisting of large red protuberances, which suppurated and poured forth pus. These have left copper-coloured defædations as broad as a shilling, principally about the extremities, like some varieties of the eruptions produced by mercury. As he never recollects having taken, or had occasion to take mercury, it cannot be attributed to that cause. These eruptions were accompanied with violent inflammation of the tunica conjunctiva of each eye. Neither venesection nor the application of a blister, which latter acted properly, relieved the symptoms. Antimonials were taken, and the ointment was used with its full effect on the skin, and the antiphlogistic regimen enjoined. Though a stout young man, he was now totally incapacitated for labour. Bandages were applied to heal the ulcers on the legs, not without attention also to proper surgical treatment in other respects. After this combined plan had been carried into effect, his recovery began to advance, but he remained, for some time after convalescence, so much enfeebled as to be unable to return to his usual avocations.

CASE VIII.

Ann Serjeant, of Kingswood, ætat. 15, (June 25, 1820,)—About ten weeks since was suddenly frightened by a person speaking sharply to her. Her whole frame became affected with nervous sensations, and in four weeks afterwards a partial hemiplegia seized the left side. In addition to these symptoms she had chorea, affecting certain muscles of the arms and neck, and she had also slight convulsive fits, about fifteen times in twenty-four hours, after which she was accustomed to fall into a stupor, with her eyes fixed. She could hear sounds confusedly, but every thing immediately directed to the ear was perfectly unintelligible. She persevered in the usual medicines for a month or six weeks, without advantage. I then ordered the ointment to be applied, in the line of the cervical vertebræ. I saw her soon after the application was made, and found her evidently amended in every respect. She took oc-

casionally a small dose of jalap and calomel. Her mother now, as the distance was considerable, ceased to bring her, but sent to inform me that she was quite well.

I may observe here, that this girl exhibited a curious illustration of my opinions respecting involuntary, and indeed voluntary, muscular exertions. The right arm was frequently thrown into action during the day. If it was held so forcibly as to restrain involuntary motion, the jugular veins were observed to swell, and she fell to the ground if the arm was not set at liberty. Muscular exertion, which tends to equalize the circulation, may here be involuntarily called into violent action, for distributing a preternatural quantity of blood thrown upon the brain during the paroxysms, and which, if impeded, would be followed by consequences injurious to its structure. This remark admits of extensive illustrations, which would lead me too far from my present path of inquiry, were I to go into them. I would just notice not only those *involuntary* and sudden motions which we designate by the term "fits," whether epileptic, hysteric, or whatever they may be, but also the *voluntary* motions, when the brain has become turgid from any adequate exciting cause, produced under various modifications of vehemence, from the thump on the cushion to the contortions of the orator, as so frequently exemplified within the walls of both houses of parliament. How well do I remember the strong and characteristic action of the late Messrs. Fox, Pitt, Grattan, and a host of public characters.

You may say, my dear Charles, that this case is equivocal; and I am not averse to admit that inflammatory action, excited in any manner in the line of the spine, *might* have produced the same salutary effect.

CASE IX.

Mr. Fewster's Patient, a young woman.—This was a case of mania. My inquiries were particularly directed to the probable circumstance of its being preceded by hysteria; but the answers negatived the supposition. Her ravings were violent. Leeches were applied about the head, and the ointment upon the leech bites. As soon as vesicles appeared she was well. The directions given for the continuation of the use of the ointment were not attended to, and she soon again became decidedly maniacal. The ointment

was soon re-applied with the same cuticular effect, and she completely recovered. Such is the outline furnished by my medical friend Mr. T. Fewster, of Thornbury, a gentleman of long and extensive experience in his profession.

CASE X.*

Elizabeth B. *æt.* 23 years,—Was delivered of her first child Nov. 25, 1820. She has been occasionally subject to hysteria. The second day after parturition she became suddenly deranged, and totally unmanageable, obstinately refusing to take food or medicine. The ointment of tartarized antimony was then rubbed along the inner surface of the fore-arm, from the joint to the wrist; but a fortnight had nearly elapsed before a vesiculated eruption was brought out.† This, I presume, might be in some degree assignable to the attendants, who were irregular in applying it. As soon as the eruptions appeared, amelioration of her symptoms was evident; she was kept under the influence of the ointment nearly three weeks, during which time she progressively improved. About ten days after the appearance of the primary eruptions on her arms, similar pustules appeared on her back. I saw her this day (Jan. 6, 1821); she appeared perfectly well. The eruptive action had subsided. During the use of the external application she took an occasional purgative, and she had also a solution of the antim. tart. to take internally in nauseating doses, but her friends found so much difficulty in getting her to swallow any thing, that I believe it to have been so far relinquished, that her restoration may be chiefly imputed to the ointment. It may be right to observe, in elucidation of this individual's complaint, that she is an unmarried woman, and in consequence of seduction, with rather a delicate mind, she suffered great mental anxiety during the latter part of her pregnancy.

* These two Cases, X. and XI. were communicated by Mr. Fry, Surgeon, a gentleman in extensive practice at Dursley, in whose integrity, from long intimacy, I can always confide.

† This torpor of the skin is not unusual in cases of this description; I have met with it many times in my practice. I once put setons into the temples of a lady who had hysteria, with occasional aberrations of mind: at the end of ten days, no inflammation, swelling, or discharge, had commenced. The same circumstance has, however, been noticed by others.

CASE XI.

Charlotte Halloway, ætat. 20,—During the last two years has been occasionally subject to great dejection of mind, which generally lasted for a week or ten days at each recurrence. This depression was almost invariably succeeded by an unnatural excitation of spirits, but never by incoherent expressions or actions. About the middle of November 1820, without any seeming immediate cause, she became suddenly and completely insane. The antimonial ointment was rubbed upon the inside of her fore-arms, and at the end of four days, the usual eruption appeared, and she *immediately* became much better. The application of the ointment was then neglected, the eruptions began to die away, and she had a recurrence of insanity, but not so violently as on the first attack. Recourse was again had to the ointment, and a fresh crop of eruptions was produced within the space of four days. She then gradually got well, and has continued so to the present moment (Jan. 5th, 1821).—Her own statement to this effect is confirmed by her mother, who says, that she is in better health than she has been for the last two years. The original vesicles are now exsiccated, but the scabs have not separated; some are yet scattered over her body.

Feb. 16th. She has again relapsed. The ointment had succeeded in the previous relapses, and the influence was such, after a crop of pustules had been produced, that if kept up she would probably have completely recovered, but the parents relinquished it with a singular indifference, and have since been endeavouring to get her into St. Luke's Hospital.

CASE XII.

Mr. R * * *, a young man in trade, connected with the shipping.—Hypochondriasis.—He complains of an affection of the head, of twelve months standing; and had it not been for the assistance of a partner he would have been incapacitated for following his ordinary employments. He occasionally loses his reason, but his aberrations are not of long duration, varying from twelve hours to two days; at best, however, he is seldom quite free from mental alienation. His countenance is pallid, bowels irregular, urine high coloured, flatulent, with heart-burn, and quick pulse. He was last

under the care of a physician of eminence at Bristol, who appears to have treated him judiciously. He is directed to take the pil. hydrarg. and aloes, with a dose of magnesia and creta twice a day. At the same time he is to use the ung. antim. tart. on the pit of the stomach.

Feb. 10, 1821. Mr. R. is better in every respect. The vesications from the action of the tartar emetic are both numerous and perfect; and I think that the abatement in the cerebral symptoms has been commensurate with their formation and progress. He describes his general sensations as having been considerably relieved, or, as he expressed it, "much pleasanter," after the appearance of the eruptions. It is right to observe, that I thought fit at the same time to continue medicines which he had taken habitually to keep up the secretions of the abdominal viscera.

Feb. 15. He continues free from all the previous urgent symptoms of his complaint. He has kept the pustules in action upon the skin, by repeating the applications, and persisted in the use of the magnesia and aperient pills. Some eruptions have made their appearance under the cuticle, upon the palms of the hands, and on the scrotum.* The latter being troublesome, he is directed to use the unguentum zinci as an application.

Feb. 20. He is so much better that he is now almost free from indisposition, and wishes to know whether he may resume his ordinary occupations.

CASE XIII.

Mary Smith, ætat. 21,—In the winter of 1819 was affected with pyrosis. Soon after she had cough with difficult respiration, and pain after swallowing in the region of the stomach. Her food passed off imperfectly digested, and her evacuations were mingled with slimy matter. She has felt pain at different periods of her complaint, shooting in various directions, apparently among the abdominal viscera, particularly under the edges of the ribs on the left side. I have invariably found her pulse very quick, and her heart frequently palpitates. She has had profuse hæmorrhages from the lungs. On the first seizure, she brought up more than a pint of blood. Venesection was used, but without alleviation. I saw

* See a coincidence observed by Dr. Robinson, quoted pages *seq.*

her at the time I received this narrative, and directed for her the oxyd of bismuth, according to the plan brought forward by my friend Dr. Marcett. It produced its usual good effects, though they proved but temporary. Whilst bismuth was used internally, the ointment was rubbed on the inside of one of her arms, near the wrist, and with its usual effect on the skin; yet she had frequent relapses, attributable chiefly, I conceive, to the situation she had been doomed to dwell in, a parish workhouse. However, this being known, her food and lodging were rendered more comfortable, and better adapted to her situation.* The consequence is, a more perfect freedom from the whole train of morbid symptoms which had so long harassed her; and it is worthy of remark, that when any threatening feeling takes place, she almost instinctively has recourse to the application of the ointment, and never (as she declares) without obtaining the relief she seeks for. The case never assumed the character of genuine tubercular consumption, but consisted in chronic inflammation of the mucous membranes of the bronchia and intestines with pyrosis, and cough like the tubercular, which is so frequently concomitant with the latter (pyrosis). The many symptomatic derangements of other viscera which attended this case, and which abound in all similar cases, afford a satisfactory diagnosis between it and *idiopathic* phthisis. We may infer, from the partial influence of the ointment in this instance, how useful an auxiliary it may prove in complicated constitutional cases, where entire success cannot be expected to be a result of its application.† Trials far beyond the limits of my present practice will, however, finally determine this point. It is hard to define what membranes sympathize most with this action of tartar emetic, but it is clear that mucous membranes sympathize very conspicuously.

* It is to be lamented that the opulent in most countries, pay so little attention to these abodes of wretchedness. When sickness and poverty unite, no uncommon union here, let those who have felt the *one* (and who has not felt it?) conceive, if they can, the situation of a sufferer, when united with the *other*. See an interesting little work from the philanthropic pen of the Rev. Richard Worthington, M. D. "for bettering the condition of the sick Poor."

† In a patient who has suffered from obstinate general derangement, and atony of the digestive organs, with cough, constant feeble respiration, and disposition to sore throat, the ointment had the singular effect of relieving the cough and respiration, but at the same time of *apparently* re-producing the sore throat, after each application. It is possible this might be coincidence.

June 20, 1821. This patient now is almost free from any symptoms of deranged health.

CASES XIV. XV.

The two following Cases are thus briefly reported by a Medical Gentleman in my Neighbourhood.

"In the case of Miss A. a young woman, symptoms of hysteria and hypochondriasis have manifested themselves for more than a year past, latterly verging to that extreme in which hysteria glides into insanity. I directed the antimonial ointment to be rubbed on the arm, and I am happy to give testimony to its favourable effects, by saying, that she is decidedly convalescent. Various remedies had been before exhibited, under the direction of several medical gentlemen, but without any constitutional amendment.

"Mrs. G——, from Birmingham, afflicted with despondency, bordering on insanity, has been treated successfully with the ointment principally; and now only labours under slight and occasional symptoms. Being so much better she is gone from hence, and is no longer under my care."

Feb. 18, 1821

CASE XVI.

Mr. Frankis, Slimbridge, ætat 37,—Has been very corpulent, and for some years much disposed to hard drinking, especially ardent spirits, the use of which he is not entirely capable of resisting. He caught cold in consequence of sleeping in an open carriage, exposed to a damp air, and previously drinking cold cider when he was warm. He has had hæmoptoe; and a considerable quantity of blood has been expectorated at several times. His respiration is now very quick and difficult, with cough and expectoration of very inspissated phlegm. His pulse is quick. He has been bled repeatedly during his illness, which has been now of thirteen weeks duration. This, and some medicines which were prescribed for him, have given relief to the chest. Besides occasional aperients, and a mild linctus, the form of medicine now prescribed consists in a combination of pil. scillæ co. and pulv. ipecacuanhæ co. He has, last of all, used the ointment, which has excited a very irritative crop of pustules on the chest. Since they

have been fully formed, and have discharged, he has found great relief of respiration, but not so decidedly of the cough.

June 12. A month has elapsed since the former note was taken. He continued the pills until their effect seemed to diminish. The postules on the chest continue to suppurate. His respiration, cough, and general strength, are greatly improved. He sometimes spits very small quantities of blood in the morning, which has been long his habit. His pulse was never below 100 during his former symptoms; it is now about 80, and strong. He feels on the whole so much better, that he expresses great confidence in his recovery; but this I own, from his long continued bad habits, is more than I feel myself.

CASE XVII.

Communicated by Mr. Fry.

Mr. William H. about 40 years of age,—For twenty-five years has been subject to pulmonary affections. He has a very thin delicate skin, and possesses manifestly the true phthisical diathesis. When young, he was subject to a very alarming hæmoptysis, of which he recovered, and has enjoyed an improved state of health, though nothing like exemption from pulmonary disorder. After being severely indisposed with affections of the chest, viz. cough, and impeded respiration; he was seized, last summer, with a dangerous recurrence of the hæmorrhage. It was concluded that he had pulmonary consumption in the last stage, and the case afforded every indication of terminating fatally, but the hæmoptoe, which became more and more violent, was at last arrested by superacetate of lead, and the tart. emet. ointment was applied to the chest. As soon as the eruptions vesiculated, he got better; when they died away, he began again to feel uncomfortable about the chest, complaining that he felt “plugged up in breathing.” He finds immediate ease by a renewal of the eruptions, and has, in consequence, continued under their influence for nearly twelve months past. His skin is so irritable, that pimples almost immediately follow the application, though in some individuals three days will elapse before they will be excited. The ointment gives him most relief when applied to the opposite side of the chest to that most affected.

CASE XVIII.

John Gay, 39 years of age,—Was taken ill about four months ago, with feelings of languor and nervous debility, accompanied with dyspepsia, bilious and acid eructations: he had also pain in the right hypochondrium, dry sore throat, and general feverishness. With these symptoms he had pyrosis. His complaint continued to grow worse, especially a dull pain which had been going forwards in the region of the liver, till he was seized with symptoms of complete obstruction of the common duct of the gall-bladder. His skin became tinted with a deep blackish yellow colour. The food and medicines which he took, for some time after the symptoms of obstruction, regurgitated in an unaltered state, from the stomach. He found great difficulty in procuring medicines, from different medical men, that would act on his bowels. In this emergence, scanty evacuations of slime were procured by the administration of clysters; but he passed no solid stercoraceous stools; pills of soap and rhubarb, combined with an aromatic, and also the ointment, were now prescribed for him. Pimples appeared within twenty-four hours. These suppurated, and discharged pus with unusual freedom, and disposition to continue to discharge. About the time at which the pustules appeared, a sudden burst of evacuation took place, consisting first of bilious coloured fluid, next of slime of a green hue, and an abundance of shreds of a skinny appearance. In his first stools, at this time my patient observed a mass, which he conceived to be food and medicines which he had taken previously, and had remained unaltered in the alimentary canal. The pain in his right shoulder and right hypochondrium abated rapidly, and his stools came away more solid, but still enveloped in slime. He is now convalescent, but tender under the margins of the right ribs, and possessing a mitigated degree of unhealthy action about the liver. As his health improved, the eruptions evinced a disposition to dry up, but they have been continued. He had, four years ago, a constitutional sore, which has occasionally healed and re-appeared: its final suppression may have had some connection with his present complaint. His recovery went on and was perfected in far less time than I could reasonably expect, considering the extreme state of debility to which he was brought by his long and severe sufferings. Within six weeks he resumed his laborious occupation, which was that of a sawyer.

Such, my dear Charles, is a sketch of Cases in which the practice has for the most part been attended with successful results.

These trials of the influence of vesiculo-pustular eruptions excited by means of tartarized antimony, have as yet been limited, but I trust the general favourable results of the experiments made, will apologize for my hazarding a few physiological hints for the consideration of those, who may think a wider basis to work upon desirable. In many points I can have nothing to offer, save in the form of speculation, but I hope you will not discard my Letter until you have sufficiently reflected upon what I submit to your consideration, and you will then perceive that I make my stand on my favourite pedestal, analogy.

There was a period at which an inquiry into the effects of the application of tartarized antimony, in some diseases, appears to have been made and to have excited considerable interest. It is difficult to conjecture the reason of the chasm which took place in the inquiry. At all events it has been vaguely pursued. At the time to which I allude, 1773, two papers appeared in the *Memoirs of the Medical Society of London*, on the external application of tartar emetic; the first had for its object, to deny the possibility of its external absorption;* but the second communication by Dr. Bradley contains some interesting observations on its influence in rheumatic affections, for which it had been previously recommended to the Society.†

"In these cases," said Dr. Bradley, "it was generally rubbed on the parts which were the seat of pain, and afterwards below in the course of absorption."

"In every instance it appeared to be a remedy of great efficacy; but the disagreeable symptoms produced by it, caused many either to desert its use altogether, or to apply it unfaithfully"

"In recent cases the first or second application has often removed the complaint, but those which occur by far the most frequently are of long standing, in which it may often be necessary to persevere in the frictions for three or four weeks; and it is in

* "Observations and experiments on the external Absorption of Emetic Tartar and Arsenic. By William Gaitskell, Surgeon, Rotherhithe," pp. 79.

† "Observations on the external use of Tartarized Antimony. By Thomas Bradley, M. D. and F. M. S." pp. 247—252.

these instances that we have cause to despair of the resolution of most patients.”*

After remarking on the aversion of patients to the irritation of the pustules, Dr. Bradley continues :

“ The pustules are uniformly compared by the patient to various pustules ; but they are much smaller, not so red at the base, nor so tense and white when fully suppurated. The decided relief which is commonly experienced from this application during the first week, encourages patients in general to persevere pretty firmly for the first seven or eight days, at the end of which time the pustules become so numerous and distressing, that the remedy must be unavoidably intermitted. This effect of the medicine in the above mode of application is the only objection that I have observed to the general use of it in sciatica, rheumatism, torpor, and partial paralysis. The cutaneous lymphatics seem to be very generally affected by it, but none of the deep-seated ones.”

“ When the first, or any subsequent eruption is entirely healed, a renewal of the frictions produces another in the same degree as before : whence we may conclude, that there is no occasion to increase the dose of the medicine on account of habit, as we do on many other occasions.”

Also : “ The above are the usual and general effects of the external application of tartarized antimony ; but in particular instances some deviations or irregularities were observed. These I have not been able, as yet, to impute to temperament or peculiar habits, though I expect the eruption to be more particularly distressing in the same persons that are predisposed to a violent small-pox.”

“ In about one case in ten the eruption did not appear ; in these, however, there was cause to doubt of the fidelity of the application.”

“ In several cases the eruption was not confined to the course of the lymphatics, but appeared on very distant parts of the body.” Dr. Bradley afterwards observes, “ I believe a very free use of such frictions would produce a general eruption over the whole body.”

“ In one patient, who, I am convinced, did not rub in less than half an ounce in the course of one week, the itching and eruption

* It does not appear that Dr. Bradley had any views beyond the mere irritation and inflammation of the skin. E. J.

were preceded by a general restlessness, and two or three times by a slight degree of nausea."

The most recent individual, as far as I am aware, who has written on the particular effect of tartarized antimony externally applied, is Dr. Robinson, in a good paper on chin-cough,* in whose opinions it will appear that I coincide as to the mode of its operation being quite peculiar, and contrary to the more simple effect obtained from the application of a blister, which only raises the cuticle.

He speaks in the following emphatic manner of the general effect of tartar emetic in whooping-cough:—"To these observations I have to add, that of all the remedies I have found beneficial in whooping-cough, frictions upon the region of the stomach, with the tartarized antimonial ointment, have been the *most remarkably and most undeviatingly useful*. The eruption on the stomach is frequently accompanied with a slight degree of inflammation about remote parts in females, with a spare eruption of minute pimples; and on this occurring the disease uniformly begins to abate. In cases where the patient is of a full habit, and the inflammatory diathesis runs high, it may be proper to apply a few leeches to the feet previously to the use of the antimonial ointment. *But I have used it with advantage, even in cases where the fever was attended with delirium at night*. I have never seen the eruption, produced in this way, threaten the bad consequences, from gangrene, which not unfrequently supervene when the blisters are applied too early in whooping-cough, when the inflammatory diathesis runs high, and before blood has been abstracted. The effects of the ointment in other respects are *also widely different*. *When it does produce an eruption, it almost always affords relief*: whereas I have never seen one instance where the application of a blister has been of the *smallest service* in whooping-cough, except after blood-letting, when there have been manifest symptoms of inflammation; otherwise I am fully persuaded that blisters are often hurtful."

By the tartrate of antimony we can not only create vesicles, but we can do more—we have at our command an application which will at the same time both VESICATE, AND PRODUCE DISEASED ACTION ON THE SKIN ITSELF, BY DEEPLY DERANGING ITS STRUCTURE BENEATH THE SURFACE. This is probably one cause why the

* See "London Medical Repository," Jan. 1821.

sympathetic affection excited by the use of cantharides, and those changes produced by tartar emetic, are very different.

If we enter into minute inquiry, do we not perceive that different natural diseases of the skin have their peculiar sympathies with the constitution, from causes which from analogy admit of imitation by the use of artificial irritants? First, have we not those diseases which take away the cuticle, expose the raw surface of the cutis, and excite a new diseased action on the abraded surface, which then discharges a fluid apparently consisting of little more than serum, next a semipurulent, and, lastly, a discharge nearly purulent? Secondly, diseases or derangements in the cutis itself, which call a train of sympathies into action of a still more extensive and important nature: and, thirdly, the subcutaneous affections of the cellular membrane, which indeed do not admit, strictly speaking, of being directly classed with the pure diseases of the skin, though the skin becomes indirectly affected, as in boils or carbuncles? Hence then, in all probability, arise their complexity and extensive effects on the constitution.

Some of the most unsightly, obstinate, and widely-spreading cutaneous eruptions produce little or no constitutional irritation, nay, merely simple itching. For what reason? They are attached to the surface of the cutis merely, and do not penetrate into its substance. To the same causes is attributable the comparative mildness or entire want of secondary fever in varioloid affections, and in chicken-pox.

Many observations might be made upon the distinction between the mildness of small-pox in some cases, and its severity in others, which tend to support the above observation. A different degree of secondary fever will follow, when the skin is simply affected on the surface, and when it is partially destroyed beneath. The skin is a very comprehensive term: it may be said to consist of cuticle, cutis vera, rete mucosum, and its partial connection with cellular membrane. In my first work on the Vaccine, I pointed out the different symptomatic and constitutional effects produced by variolous virus, whether inserted in such a way as merely to be lodged within the skin, or to pass through it, and to be lodged upon or within the cellular membrane.*

* "Inquiry into the Causes and Effects of the Variolæ Vaccinæ." Third edit. p. 50—53.

It having appeared in my own cases, and in those of others, that the relief afforded was almost invariably timed, not simply by the first blush of inflammation, but by the appearance of vesicles which contained a *secreted fluid*, and that these seemed absolutely necessary for the production of constitutional influence. Ought not, therefore, the imperfect state of our knowledge on this subject to excite our deep physiological inquiries, to endeavour to account for this extraordinary phenomenon?

Is it not possible that in cases where the artificial vesicle has been of benefit to the constitution, that the effect has been similar to that by which Nature gives her aid in most instances where she produces spontaneous eruptions?

Whoever has observed the deranged state of health where vesiculated eruptions have been called into action by an effort of Nature, must have seen how often they arrest the progress of the original disorder, and may we not from thence infer what appears to me to be a pretty general law of Nature, that she often gets rid of diseased action affecting vital organs, by exciting eruptions in other parts not vital?

I am aware that this doctrine is not entirely new or unobserved; but though the phenomena have been so often described, have we taken the hint in our treatment of diseases either chronic or acute? The humoral pathologists maintained the *metastasis* of diseases; but, instead of arguing that eruptive affections were *exchanges of diseased action*, they considered them to be the *drains* by which certain humours existing in a depraved condition of the circulating fluids were carried off.

The illustrations which I shall presume to offer relative to this part of my inquiry may be too limited, but I find it difficult to mark the boundary within which Nature acts. That people lose their catarrhs upon the appearance of eruptions on the lips, for example, is one of the most familiar of all facts of this kind. My friend, the respectable Dr. Fleming, formerly at the head of the medical department at Calcutta, and now a worthy member of the house of commons, to whom I have to acknowledge great obligations, told me, that he was formerly often attacked with catarrhs and intermittents; "in which," he said, "I took the bark frequently, but seldom got well till herpetic eruptions appeared on my lips."

Lest you should think what I say here at variance with what I have repeatedly said elsewhere respecting our sweeping *all* erup-

tions from the skin previously to, or at the time of, our inserting the vaccine lymph, allow me to bring to your mind the fact, that in this case we make a commutation only, as the influence of one eruption is changed for another; for no sooner is the spontaneous eruption subdued, than the artificial (the vaccine) takes its place, and safely affords its influence. Considering these infantile eruptions as guards to the constitution while under various irritations, that of teething, for example, and others, I could on no other principle, with due attention to physiological caution, venture to supersede them.* Indeed they are sometimes converted by inoculation into vaccine vesicles. I may here observe, how frequently do we find fever, diarrhœa, or convulsions, follow tooth-rashes, if imprudently checked.

Dr. Ferriar, in his *Medical Histories and Reflections*, under that head in which he has treated of the conversion of diseases, has occasionally alluded so closely to the subject to which I am now calling your attention, that his opinions and observations may be very aptly quoted here, as being in unison with my own. He observes, (Vol. II. p. 69,) "there are many unexpected and dangerous conversions, in the class of exanthemata, from the eruptions, after they have been completed, to inflammation of the internal parts: that in erysipelas we are not yet acquainted with all the circumstances under which inflammation is translated from the skin to the brain," &c. After thus noticing these phenomena, he very justly says: "We perceive at once a great deficiency in medical science, and a train of inquiry equally curious and useful."

"Cutaneous eruptions often extinguish dangerous diseases. Excepting the regular exanthemata, such conversions seldom happen in acute disorders. I have known acute rheumatism accompanied, in two cases, with efflorescences on the legs, but they seem to have no effect on the pains.† Madness and melancholy, epilepsy, delirium protracted after fever, dyspepsia, various pulmonary affections, are all observed to be mitigated or removed on the appearance of cutaneous disorders; especially on the return of those which, after becoming familiar, had been suddenly suppressed."

* See my Circular Letter, which has been widely distributed, and also inserted in many of the periodical journals within the present year.

† Here there was no vesicular eruption, which *in general* seems the favourite scheme of Nature for limiting the duration of peculiar morbid actions. E. J.

"In electrifying patients for obstinate cases of palsy, I have often remarked, that the patient received *no benefit till red, fiery eruptions were produced* on those parts of the limb which were surrounded by the chain."

The practice of making artificial eruptions appears not to have escaped the mind of Dr. Ferriar, but he speaks unfavourably of the result. His opinions on this particular point, however, are not perfectly satisfactory to me, for he has given no information concerning the irritants which he employed, nor whether his experiments merely produced vesiculated elevations of the cuticle, or went further. He says:

"Some Practitioners have imagined, that much could be done by producing crops of pustules on the surface by stimulant applications, in diseases of the lungs and the joints. My experience of this method furnishes no proof of its efficacy.

"Perhaps, as I have suggested elsewhere, a specific eruption is requisite, in such cases, more frequently than we are aware."

That a small cluster of vesicles, a simple vesicle, or even a serous oozing from an abraded surface, may produce a new general action, is not to be disputed. It has passed under my observation, times out of number, in cases of vaccination. But here, I have some apprehension Nature will not always act so friendly a part as my ardent hopes induce me to expect. In one instance she produces the sort of eruption required to effect her purpose; in the other it is called out involuntarily. On this account, in non-exanthematous fevers, which have a mortal tendency, perhaps a variety of stimulants would be deserving of trial at the same time.

Dr. F. continues: "In general there is no safer conversion than that to the skin; the distance of the affected part from those necessary to life; the varieties in the state of circulation, to which it is habituated, and the easy application of external remedies which it admits, combine for the security of the patient; whenever a disease is fully translated to the skin, sudden conversions from the skin to the internal parts, are, I believe, universally dangerous, whether they interrupt the course of an acute or a chronic disease."

"Some affections of the skin, though they happen in consequence of acute diseases, seem to have no effect on the original complaint, such are petechiæ in typhus."*

* See Remarks, pag. seq. on Plague. E. J.

"In the second case, published in the *Medical Histories and Reflections*, there is a curious instance of connection between an erythematous state of the skin and convulsions, attended with rack-ing pain in the stomach."—P. 78.

In vol. II. previous to these observations, Dr. Ferriar alludes to some interesting cases.

"In one maniacal case, which succeeded an ill-treated typhus, the patient received no relief from medicines, till a broad yellow scurfy eruption* appeared about the crown of his head, which was bald. Successive crops of these eruptions delivered him completely from all remains of his mental disorder."—P. 46.

"I have noticed elsewhere,† a remarkable case, in which epileptic fits were produced by the retrocession of the itch, in consequence of some external application. In that case the epilepsy resisted all the usual methods, and was only cured by re-producing the itch."

"Instances of the production of melancholy and madness by the suppression of eruptions, or the healing of old ulcers and habitual drains, are common in practical writers."‡—P. 47.

"Tedious dyspeptic cases are often converted to cutaneous eruptions, in distinct pimples, of a fiery red colour; such eruptions extinguish the complaint in the stomach."—P. 50.

Huxham, in his *Essay on Fevers*, has related some general facts, which, though brought into compliance with the prevailing doctrine of his time, merit quotation. That part is particularly worthy of notice here which describes the consent between the lungs and skin, since it very materially assimilates with my own experience of the favourable effect of artificial eruptions in some pulmonary cases.

"Sometimes the morbid matter is critically translated to the lower parts, producing phlegmon, impostumes, erysipelatose or œdematous swellings, ulcers, &c.; particularly in persons formerly subject to swollen or sore legs, which are frequently noted to swell, or break up again, at the close of peripneumonic disorders, to the great relief of the breast. It is a well known thing, that on drying up

* It must be recollected, lest I am accused of contradiction, that no scurfy appearance can manifest itself on the skin without its first assuming a fluid form.

E. J.

† *Medical Histories and Reflections*, pp. 183, 184.

‡ Arnold, in his work on *Insanity*, has named the retrocession of cutaneous affections as a cause of apoplexy.

ulcers in the legs suddenly, the lungs become forthwith affected; and that hydropic tumours of these parts, forced up by laced stockings, bandages, &c. immediately bring on asthmatic disorders.”—“When blisters applied to the legs in pulmonic diseases, *ulcerate severely*, they commonly give great relief; but they are often exceedingly difficult to be healed up. This was particularly remarkable in the years 1740, 1741, 1746, 1747. I then also observed that if the discharge, from the ulcerated blisters, was suddenly suppressed, not only the cough and difficulty of breathing returned, but sometimes a very great purging, and sometimes very profuse sweats forthwith came on, &c.”—“From some observation of this kind, it is likely the ancients (who always carefully studied to follow and second Nature’s endeavours) applied *acrid epithems*, as salt, mustard, &c. to the breast, back, and shoulders, in pulmonic distempers. *It is certain there is a great consent between the skin and the lungs, as is evident in a repelled itch, small pox, measles, &c. which immediately fall on the breast.*”—Pp. 220 and 221.

An apology is due for citing facts of such common occurrence, especially in the old authors, and the more general since they were so fundamentally combined with the doctrine of the humours; but though common, yet as your father observes, prefatory to numerous examples (see *Elem. of Pathology, chap. Relation of Diseases by Conversion*, a work of which the high importance is not enough appreciated); “they give very important information as to the nature and cause of diseases.” The particular interest of these quotations does not consist so much in their simple pathological consideration, as in the mutual resemblance of the effects of the natural and artificial process.

In order that I may display, in a still stronger point of view, the analogy between the phenomena of artificial and spontaneous eruptions, and the peculiar operations which we may hope to imitate in certain states with successful results, allow me to bring to your recollection, in a few preliminary observations, the rise, progress, and termination of what is called an exanthematous fever. The small-pox will afford a luminous example.

Morbid animal matter, generated by this disease, is applied to the body either by what is termed the natural or artificial mode. After a given space of time, in either case, diseased action is manifested by that constitutional derangement which is designated fever. This goes on for a limited period, when eruptions appear on the skin,

which soon show on their apices vesiculated specks. Here the disease, as far as it depended on the *primary action* of the infectious matter which called it into existence, terminates. But now a new train of symptoms comes on, consequent to the diseased action excited on the skin by the *pus-tules*, the influence of which is felt in proportion to their numbers, their malignancy, the disposition of the constitution, and the extent to which they penetrate the skin. The fever, in the first and second instances, has two *distinct* origins. In the *first* instance, it arises from the influence of the morbid matter inhaled, or intentionally applied; in the *second*, from diseased action going forward on the skin, and, in many instances, also on the mucous membranes of the fauces, trachea, and ramifications of the bronchi. The rapidity with which, in some instances, the secondary diseased action follows the primary, often obscures the distinction. Of this the ordinary phenomena of confluent small-pox and scarlatina exhibit familiar instances. In the first of these the skin is often so quickly and universally assailed, that there is, in most instances, no interval of cessation. Nature is in a hurry to call out her guards!

Let me here introduce some practical remarks upon the benefits which may be derived from sedative applications, where the pustules are formed so thick upon the cutis as to augment in a high degree the secondary fever. From the rare occurrence of small-pox in this district, I have had no opportunities of making the experiment myself, but on suggesting it to my friend Mr. Fry, he made trial of it in the case of a young woman, when the small-pox made its appearance in the town of Dursley some months since. This patient had a full burthen of distinct small-pox, and her countenance was loaded with pustules. In this state one cheek was sopped with liq. lythargyri somewhat more diluted than I intended, while the other was suffered to take its course for the sake of comparison. The consequence was, that although, from excessive occupation, this process was not repeated by Mr. F. the effect was nevertheless very manifest, for the pustules were so much checked in their progress to maturation, that they could be scarcely said to have matured at all. This practice suggested itself to me in consequence of using lotions which possess a chemical, probably a coagulating influence over the secreted fluid itself, as well as the organic arrangement destined to form the secreting process, in cases in which the irritative inflammation that sur-

rounds the cow-pox pustule has a tendency to ramble too widely.—Of this I may cursorily observe, we shall hope to see no more if attention is paid to my instructions lately re-published.—The principle, I must repeat, consists in mitigating the secondary commotion in the constitution, by checking the activity of the pustules which excite it. How often have I seen violent febrile irritation in the constitution, arising from carbuncle and erysipelas, entirely removed by the use of these applications ! In London, some years ago, I suggested repeatedly to the late Dr. Woodville, who had such opportunities at the Small-pox Hospital, and again to his successor Dr. Joseph Adams, in some of those desperate cases in which fatal results must inevitably follow when the disease was left to pursue its own course, to sop the skin, or even to wrap the patients in sheets wetted with liq. plumbi, but without exciting any practical attention. Even should this, or any other mode suggested by the hints thrown out, prove successful, *nature would probably require that we should leave here and there a cluster of pustules, e. g. on a leg or arm, or any other convenient part, to go through their course.* I am aware of the injurious influence of lead, as no one has seen more of it than myself, but, in cases like these, we are warranted in running a risk to avoid destruction OTHERWISE inevitable.

In advancing an opinion that the secondary fever in small-pox is of another kind to the primary, I believe that I differ from other authors. Dr. Cullen in his "First Lines," seems to speak as if he believed the secondary fever to be often a continuation of the primary or eruptive fever. He says, "But if the secondary fever follow the confluent small-pox, and be a continuance and exacerbation of the fever which had subsisted before," &c. Sydenham, though led astray by the theories of the humoral pathologists, in his subsequent reasonings, most correctly observed the phenomena and proximate cause of the secondary fever in small-pox. He says, "For after the most exquisite observation, the chief of all is, that in the small-pox, the *greatest safety* proceeds from the *paucity* of pustules, and the *most danger* from the *fullness* of them; and as they are *few* or *numerous*, so the patient *lives* or *dies*. I think it very easy to give an account why the patient is more or less endangered, according to the greater or lesser number of pustules, for every pustule is a *phlegmon*, **THOUGH VERY SMALL**, and presently *imposthumates*." P. 170. He afterwards correctly indicates the

practice to which I have had recourse. "Wherefore, if the patient be not otherwise in danger (to omit for the present the bloody urine and purple spots) than by the great number of pustules, I diligently consider upon what account they come so full, and I endeavour, all I can safely, to restrain them, (Why then not keep them within a certain boundary by more powerful means than merely keeping the skin cool? E. J.) which indeed is the main business, and the best means to help the patient; for it is very hazardous to do any thing in this sort, when the disease is established." P. 271.* Sydenham, however, used no externals; it is evident he alludes to medicine and regimen.

The rule may be admitted as general, though not unconditional, that wherever fever is of such a nature as to have at first a bad tendency, the eruption appears quickly. In the confluent small-pox the eruption shows itself much earlier than in the mild, and in scarlatina sooner than in measles. In the measles, the pulmonary affection accompanies every stage. Sydenham observes, "The symptoms of the measles do not abate by the eruption, as in the small-pox; yet I never observed the *vomiting* afterwards, but the *cough and fever increase with the difficulty of breathing*, weakness of the eyes, and the defluxion, or continual drowsiness." Sydenham, like all the other medical men of the day, observing the symptoms of fever going on in a continued train, from the period of accession till the termination of the whole disease, did not consider that one set of symptoms were the consequence of the primary action of morbillous matter, and the next train secondary, and the consequence of extended affection to new organs. May not the fatal disposition of plague be often owing to the eruption not appearing sufficiently early to prove salutary; and, even when it does appear, assuming only the form of small carbuncles? If carbuncles appear on the skin, and *give out a fluid* they do good, but are unfavourable if merely subcutaneous. Authorities are numerous.

As proof of the protecting power of spontaneous eruptions, though under peculiar circumstances the boundaries of protection may be over-stepped, I need only to recall to your remembrance the distresses of the constitution when the eruption suddenly disappears; and the salutary changes immediately manifested on its re-appear-

* "Pechey's Translation," Tenth Edition, 8vo. Let me refer the reader to the opinions of Huxham on the causes of secondary fever in small-pox, and its external treatment. "Essay on Fevers," pp. 136, 156, 157.

ance, in measles.* Even in small-pox, though the disease itself cannot possibly disappear wholly, the eruptions, when in a vivid state of maturation, may so lose their prominent appearance, as on a sudden to become flattened and excite distress in the constitution, which is often followed by fatal consequences.

I have seen cases where death has ensued, both in natural and inoculated small-pox, on the second or third day after sickening, when *no eruption had taken place*. In these cases the skin was in many parts marbled with broad livid lines, and in others there was ecchymosis.

When eruptions appear early which have not the proper vesicular character, the indications are the reverse of being favourable. Cases of small-pox occasionally occur, in which, during the period of sickening, the patient is seized with the usual symptoms; in the course of a day or two these symptoms are aggravated, and the skin, instead of throwing out pustular eruptions, becomes covered with vibices and purpura, accompanied with hæmorrhages. Whenever this is the case, the patient invariably sinks suddenly. These facts, though not familiar, were well known to those who were in the habit of observing small-pox, when it was more general than now. Sydenham has described analogous results in cases of the plague.† The best informed authors also tell us, in this disease, that when the skin is beset with boils (a species of eruption which is soon attended with a serous fluid on the apices,) the danger of a fatal termination is by no means so great as when there is no cuticular disease of this description; and that, when indurated lumps occur, which are only to be felt under the skin, and do not rise above the surface, no benefit follows.

The *permanent* protection by which the constitution is guarded

* It may be hastily objected, that neither measles nor scarlatina produce serous eruptions, but this would be erroneous. Vesications in both diseases, sometimes appear, particularly on the inside of the fingers. It may not be known as a common fact, that the concreted matter, which falls some time afterwards from the skins of persons who have had measles or scarlatina, is a common source of the communication of disease from one individual to another. A young gentleman who had had scarlatina at school, was a particular proof of this occurrence. After repeated changes of linen, he was sent to the house of a relative as convalescent. He often amused himself with blowing the scaly powder which had formed on his skin upon the faces of other children and attendants, to whom he thus spread the infection.

† See Swan's edition of Sydenham, 1753, pp. 77, 78.

from secondary attacks in some eruptive diseases, which in a general way appear but once, seems to be derived, not like the temporary protection against the commotion excited in the constitution, from the action of the matter generated on the skin in the form of pustules, but from the primary action of the matter on the constitution exciting the primary fever, whether derived from infection received by exposure, or by artificial application. They who have had the variolous fever without the variolous eruption have resisted the infection afterwards, as in ordinary cases. Seeing then that small-pox, scarlatina, and many diseases highly alarming at their onset, for the most part either terminate, or are much mitigated, on the appearance of an eruption, it may be submitted as a postulate, whether the tendency of many diseases, arising from the action of animal poisons brought in contact with the human body, does not in general, from want of such aid from nature, observe a more fatal course? If the proposition which I have ventured to advance, that the sympathy of the constitution with artificial eruptions has in many instances been characteristic of the sympathy between the constitution and skin, in the generality of those cases in which vesicular eruptions appear spontaneously; and if the phenomenon be finally confirmed by additional experience, that their action is therefore different in most instances from the more simple effect obtained by the application of those substances, which are termed counter-irritants, such as simply irritate or even vesicate the skin,—may not our endeavours, founded on what I have before stated, be made to excite such sympathies with advantage in those febrile diseases which come under the appellation of Non-exanthematous?

In an early publication, whilst I was writing on the subject of Cow-pox Inoculation, I threw out a hint: "As we have seen that the constitution may be made to feel the febrile attack of cow-pock,* might it not in many chronic diseases be introduced into the system, with the probability of affording relief upon well-known physiological principles?"

* I have in the Treatise referred to, called it *febrile attack*, but the term *influenza*, as it is not strictly febrile, would have expressed my meaning more correctly; for at that early period the effects of co-existing herpetic eruptions were not clearly known to me. The vesicle on the arm and surrounding skin is apt to participate in their nature, and it is from this source that febrile commotion manifests itself in the constitution, and not from the vaccine vesicle, when it goes through its course with regularity.

It is a matter of interesting speculation, in what way the sympathy is created between the constitution and the skin, and how the former feels the influence of spontaneous eruptions. Is it not, in all probability, through the medium of the brain and nervous system? The disposition in the brain to receive unfavourable impressions from ill-timed suppressions of cutaneous affections, is a reflex action favourable to my supposition; and I may again remind you of the ostensible connection of the brain and nerves with the appearances on the skin in the exanthemata. Secretion is an important function, undoubtedly regulated by nervous influence, and by making supernumerary and often temporary secretions, as by extraneous eruptions, may not certain laws of morbid actions, producing results similar to those reasoned on by Mr. Hunter, be the most general purport of their appearance? May we not, by making new diseases, check the progress of disease in a vital organ or in a part where it may be unmanageable, by substituting another which is under our control?

I conceive, that not only the typhus and yellow fever, and other acute diseases unattended with eruptions, rheumatism for example, might be comprised within the sphere of our experimental attempts, but that many other affections may also be included, in which the brain and nerves are primarily disordered. Suspecting also, from various coincidences, that dysentery in the first instance is an affection of the brain, and that the visceral derangement is merely consequential (I cannot here go into detail), I should try the ointment as a remedy, if opportunity offered.

Before I proceed farther with my opinions regarding the influence of artificial eruptions in fevers, &c. it may not be amiss to go into a short inquiry, which may probably be thought interesting; viz. the resemblance of certain diseases, which are most strongly characterized by symptoms of a disordered state of the brain and its appendages; as violent catarrhs, which I too well know may be called typhoid, having too often experienced both typhus and contagious catarrh myself. I have long suspected, from comparative dissections, that the sinuses are more in fault, as I shall explain, in the worst species of catarrhs and typhus, than we are aware of. How often have we known typhus removed by an early hæmorrhage from the nose; but who thinks afterwards of going further, and examining these parts attentively in those cases which terminate fatally? Allow me to remind you, that your post as phy-

iscian to more than one large hospital, may possibly afford you an opportunity of elucidating this point.*

You will recollect our conversation respecting *staggers* in the horse. In every case which I could meet with (and I am happy to say there were not many), I found the symptoms and appearances bearing a strong resemblance to those in the dog distemper. In one case two or three ounces of coagulated blood was found adhering to the mucous membranes of the triple sinuses—a proof of extreme turgescence, the surrounding parts were excessively inflamed; but there was no corresponding state of the brain, which could account for the violent delirium which preceded death. Can the brain *itself* ever be inflamed, or is inflammation within the skull confined to membrane only? The near connection between the nerves expanded over the sinuses and the brain need not be pointed out to you. I some time since had an opportunity of watching the progress of hydrophobia in a dog, for several successive days, till he died: the appearance of this animal, on dissection, and of that which dies of the *dog distemper*, bore a nearer resemblance than I expected to find. Inflammation was certainly apparent on the membranes lining the sinuses at the basis of the skull. But though the analogy between the two diseases is stronger than is generally supposed, it must be recollected, happily for the human race, that the morbid matter secreted in the *distemper* will not produce hydrophobia by effluvia or contact.

What would be the effect of experiments conducted on the principle of making new cuticular diseases not only in non-exanthematous, but in certain diseases generated by animal poisons, which I am aware are not classed with fever? For here analogy lends its aid. Many animal and vegetable poisons, taken into the stomach, very quickly excite eruptions on the skin, and thus obviate their deleterious tendency †

* See my paper on the Dog Distemper, Medico-Chirurgical Transactions, Vol. I. pp. 263, 264.

† Those clusters of subcuticular effusions which constitute irregular elevations on the skin, which have been termed *Nettle Rash*, and which are so often and so suddenly called into action, may be considered as belonging to this class of preservatives. Although their appearance is so very sudden, yet I do not see how they can arise but from a derangement in the action of vascular structures which admits of extravasation. One has this appearance after eating shell-fish, another after eating mushrooms, and so on. But in every instance, there seems to be a peculiar feeling of distress about the stomach, frequently accompanied with some affection of the head.

Although the efforts of medical men have been assiduously employed in seeking a remedy for that horrid disease hydrophobia, yet it is lamentable to think, that under every present mode of treatment, the death of the patient has, as far as my information hitherto extends, invariably attended the occurrence of the disease. But shall we abandon hope, and rest satisfied that every avenue which affords the least probability of leading to success has been explored? Though the mode of treatment has, in almost every instance recorded, been a mere repetition of one or other of those that previously proved useless, yet let not our researches here terminate. Humanity, the honour of our profession, a thousand considerations still make a loud appeal to us for further efforts. No malady incident to the human body has a more imperious claim on the utmost efforts of medical ingenuity:—a malady that carries terror in its very name! On a professional subject of such vast importance, believe me, my dear Charles, my mind has not been idle; but having never, like my valued friend your father, (who favoured the world by his admirable observations on the subject, and whose lamentable indisposition none deplores more than myself,) seen a case of hydrophobia in the human subject, I can of course have nothing to offer which is not merely speculative. However, may we not consider the success which has resulted from the trial of the artificial vesicle in the cases which are here related, sufficient to justify the effort to obviate the fatal tendency of hydrophobia, by attempting similar diversions in the animal economy.

You know, from conversations which I have formerly held with you on the subject, that I have long considered tetanus, arising during the presence of an external wound, as one of the diseases which owes its origin, like hydrophobia, to a morbid poison, brought in contact with the skin, and generated by some spontaneous process in the part affected. Ascribing it to mere irritation, I conceive, with all deference, is not admissible. That tetanic symptoms may arise from simple irritation, I am aware, as in hysteria, but this species is without danger. Very probably those cases of tetanus, caused by a wound of a nerve or tendon, are excited also by simple irritation. Have we not seen fatal tetanus occur after amputation, when the stump has been nearly healed, and the constitution apparently sound? As we must admit that the glandular apparatus within the fauces of a dog, which to-day secretes a

bland and innocuous fluid,* can to-morrow, by an alteration in the process, secrete a deadly poison, so we must, I conceive, admit that bland pus on the healing stump may, in as short a space of time, become so altered in its qualities, by the vital machinery, that its contact cannot be borne without these terrible commotions in the constitution. Recollect the case of our poor friend Ludlow, who lost his life in this way from the puncture of a thorn in the finger. In this case the mere irritation arising from the wound was so trifling, that he had not even given himself the trouble of extracting the thorn, till after symptoms of trismus had actually appeared. Recollect, too, the marked similitude of this disease to the hydrophobia, and that the sufferer expires after the same lapse of time in one instance as in the other.†

As in hydrophobia I deem every new and rational expedient really worthy of serious consideration, I would also invite attention to some efforts made through the grand sympathetic connection of the cutis with the brain and nervous system, in tetanus. In the present uncertain state of our knowledge of this subdivision of physiological inquiry, we can prefix no limits to the range of these influences.

At all events, whatever may be the results of more experience in these or other diseases, if you think them worthy of it, you have my permission to submit these hints to public attention; conceiving, that if it were merely to publish the advantages which have resulted, in the cases given, it would have been wrong to withhold them from the world. As the practice has been successful

* See remarks in Inquiry into the Causes and Effects of the Variolæ Vaccinæ.

† It may be said that this theory does not explain the causes of spontaneous tetanus; but it must be observed that a pimple, deranged in its action by any external interference, under peculiar circumstances, might produce it; for, in this instance, as in any of a less minute kind, a healing process must necessarily go forward. The spontaneous origin of tetanus is, at all events, a subject of much doubt. Dr. Colles has ingeniously maintained that the trismus nascentium and traumatic tetanus are the same; the former arising from the suppuration of the umbilical cord. In proof of his assertion, he has pointed out that the Negroes of the West India Islands, among whose infants the disease was particularly fatal, scarcely know it, since they have been habituated to dress the divided surface with the sp. terebinth. and use cold bathing afterwards daily. See Dublin Hospital Rep. Volume I.

in so many instances occurring to myself, as well as other practitioners, the event cannot with justice be imputed to coincidence.

Do not let us forget, that alteration of structure, and diseased action, are two distinct things, though one may produce the other: but it is with diseased action that we must hope to grapple with success by our present plan. I must here observe, that where a vital part be so deranged that it may be said to have fallen into ruins, little can be expected from this or any other plan of treatment.

With regard to modes of adapting the strength and management of the application to the peculiarities of the case, my knowledge is at present imperfect. The formula which I have used, in the foregoing cases, has been for the most part as follows,—but I sometimes find it necessary to make it more active.

R. Antim. Tartrat. (subtil. pulv.) 3 ij.

Ung. Cetacei, 3 ix.

Sacchari Alb. 3j.*

Hydr. Sulph. Rub. gr. v. M. fiat Unguentum.

The time cannot be precisely fixed in which it will perform its office, as it will in some degree be regulated by the irritability of the skin and the disposition of the constitution. A patient applied the ointment according to the preceding formula, at night, and had eruptions next morning, which was within a space of twelve hours. He had, however, used the same on a preceding occasion in cold weather, and with a skin less perspirable: in this instance it was much tardier in vesicating. Perhaps the application of a cupping-glass, or a sponge dipped in hot water, or even friction, before using the ointment, would be advisable, where the skin indicated torpor; but the water must be carefully wiped away previous to the application. If its speedy action is required, as in tetanus and hydrophobia, to give it a fair chance it would be advisable that trials should be made on the thin cuticle behind the ears, as well as on other parts.

In the case of a lady, where two parts of the tartar emetic and one of simple cerate were used, eruptions appeared in a few hours.

In this case I used the ointment in a great degree of strength, perhaps its greatest; but though, by these means, I have usually

* Sugar prevents the ointment from becoming rancid.

expedited the eruptive process, I have been in some instances foiled. This may be owing to mismanagement of the preparation, or its application. Dr. Bradley, in his paper, says, that he ordered a scruple of tartarized antimony to be reduced to a fine powder, moistened with water, and to be rubbed in at bed time; sometimes half a drachm. He thus states the effect, which was certainly not expeditious by this mode: "On the *second or third day* after the course has commenced, the patient is harassed by a sense of heat and itching in the part rubbed, or in the course of the lymphatics towards the thoracic duct. If the part so affected be rubbed, or in any degree irritated (from which few can refrain at first), an eruption of small watery pustules takes place *immediately*; and if the patient, taught by experience, abstain from irritating the part, the eruption will nevertheless appear, though somewhat *later*, and in smaller quantity.' Such particulars are of importance, especially with relation to hydrophobia, where it must necessarily be useless, and the faint hopes which I entertain of its benefits be frustrated, unless the effect be expeditiously produced. The irritability of the skin varies so much, even in the same individual, that the interval of its action cannot be easily determined. In the case of a gentleman, who is subject to slight epileptic attacks, which have been much mitigated by it, the influence of an irritable state of the brain upon the skin, is beautifully shown; for, when free from any pain or affection of the head, pustules cannot always be produced at all; but whenever he has a return of his disorder, they show themselves very soon after the application is made.* In hydrophobia and tetanus the greatest attention should be given to expeditious methods of producing the effect. The extent of surface on which it was applied, in the maniacal cases, was rather ample. (See Cases.)

The stimulus of the eruptions should be kept up for some time after its first effects have been exhibited, which may be done with facility; and I do not find that patients, when a little habituated, much regard it.† Sometimes it will be necessary, as is shown in

* See a contrasted state of cuticular irritability, noticed in note, p. 692.

† A gentleman who derived great benefit from the use of the ointment in a case of severe chronic rheumatism with lumbago, informed me, that the troublesome itching he felt from the vesicles in the course of their progress was effectually allayed by the use of the following cerate, spread on linen, and applied to the part.

more than one of the cases. Small quantities of a more diluted ointment, by re-application to the same part, will answer the purpose; but, if that be too tender, it may be advisable to renew it on some other. It will be also necessary to let the pustules die away gradually, as the sudden loss of their specific stimulus may be injurious to the constitution. We have yet to ascertain whether it is essential on what particular part it is applied, and whether the sympathies arising from applications made on different parts admit of distinction. We must consider nearly all that is now said respecting its application as merely pointing out a stepping-stone, and not absolutely conclusive. There may be other applications, which may produce pustules more expeditiously. I have known vesicles brought out by a liniment of sulphuric acid and oil, but without having the same influence, *because their constitutional action is probably different*. A recent communication, sent me by Mr. J. Fosbroke, who has interested himself in my ideas made known to him on the subject, contains experiments on these latter heads, which, as far as they have gone, are very satisfactory. He writes:—

“I have not neglected to seize opportunities of repeating your experiments with tartar emetic in different affections, with some variations in the formula. The results, as follow, were taken clinically, with minute and particular attention. An ointment of tartar emetic, formed by uniting as much of this salt with the savin cerate, as half an ounce of the latter would envelope, was tried by me, in the case of a young lady who laboured under hysteria, and latterly under that degree of torpor of the abdominal viscera, from sudden cerebral compression, probably about the origin of the nerves, that the state of the bowels might be said to amount to temporary paralysis. Early in her complaint, and before simple hysteria was succeeded by those vehement irregular determinations which produced the worst symptoms, the ointment was thus used, and vesicles appeared within twenty-four hours; but at first excited no predominant sensations. On the following day, the 11th of March, the cutis was so generally under the influence of the action of this irritant, that eruptions had made their appearance with heads containing a serous secretion about remote parts;

Melt together equal quantities of unsalted butter and bees-wax. Let it remain over a gentle fire as long as any scum arises, which must be carefully taken off.

of these she complained, and also of extreme irritability of the skin, and soreness at the bend of the arm, where it was applied on account of the thinness of the cuticle and susceptibility of the part. Though in a case like this, of complicated constitutional disorder, every action could not in anticipation be subdued by the influence of a solitary remedy; yet we all observed a cessation of hysterical aberrations after the development of the vesicles. When they had died away, the *risus hystericus*, and some other phenomena of this state of constitution recurred. I then re-applied the ointment at the nape of the neck, where a blistered surface had recently healed. This was done at night, and before the following morning vesicles began to form, and an abatement of the hysteria followed. In a second case, in which the patient was affected with those morbid sympathies of the head, joints, and muscles, which have been observed where the mucous linings of the intestinal canal are clogged with vitiated mucus, in consequence of over-action of an irritative rather than inflammatory nature, the same form of the ointment was used, not, however, so much on account of these symptoms, which merely represent the case partially, as of others affecting the chest, from a similar condition of the bronchia. His respiration had been so impeded by these lodgments of mucus, that he had been attacked by symptoms like those of spasmodic asthma, and considered by a preceding medical adviser as possessing this complaint in an incurable degree, a prognostic, however, which certainly proved fallible. Suspecting if disordered function of the skin might have had any share in the patient's malady, I made inquiry whether he had ever had any eruptive affection about him, he told me, that two years ago he had had pustules about his body and face with watery heads, afterwards becoming purulent. He was persuaded by a medical practitioner that his disorder was the itch, and was cured by external applications in consequence of this opinion. After this time constitutional disorder came on, and whenever his skin became dry and torpid from chills, his complaint increased.—I give this detail in proof of the axiom which you have laid down, that “diseases of the skin are diversions in the animal economy for transferring diseased action from parts vital to parts not vital.”—I remember the expression too with which you continued, “that every pimple with a vesiculated head has an errand to perform for the benefit of the constitution.”—The ointment was applied, and pustules in a full crop

came out in *four hours*, very large and full of fluid.* This will be gratifying, as you expressed much anxiety for the early appearance of vesicles in the experiments which you have proposed in tetanus and hydrophobia. The patient at the same time took the acet. colchici, neutralised with magnesia, and tartar emetic, which dislodged great quantities of mucus and slime in both lines of the mucous tracts, the pulmonary and intestinal. Under the combined influence of these he improved rapidly, and is now recovered. An accident in practice has enabled me to exhibit the active powers of this external stimulus in a strong point of view. A blundering fellow, from self-suggestion, carried a box of the ointment intended for one patient to another, with an irritable ulcer on the forepart of the tibia. He delivered it to the patient with this significant recommendation, "Here is the very right thing itself." The daughter of the patient, pleased, according to feminine refinement, with the delicacy of the colour, and no proselyte to the Virgilian adage of, "*Nimum ne crede colori*," immediately applied it with extraordinary promptness, and very cheering auguries of the beneficial influence of the remedy *expectante*. But the disappointment that followed almost baffles description. Though washed off with immoderate ablution and pains and haste, far exceeding that with which it was applied, the muscles were thrown into violent spasmodic contractions, adequate to render the patient apprehensive that the foot would quit the leg. Poultices being put on, the irritation abated, but did not entirely subside until the patient had sustained a severe rigor.

This case recalls to my recollection one related by Sir Astley Cooper in his Surgical Lectures, where similar spasm of the muscles attached to the vertebral column followed its inunction in this region of a strumous subject. I applied the ointment in a fourth case of very acute inflammation of the mucous membranes of the bowels. It was rubbed a little above the umbilicus, where pain was most severely felt, over scarifications purposely made by the usual instrument, a cupping-glass being previously put. I saw the patient eight hours afterwards, and vesicles had formed of large diameter round the edges of the incisions. Next day they became excessively painful. The centre now contained a black depression, appearing

* The part infriected was the scrob. cordis, which I have reason to think is very susceptible, and a very general situation of herpetic vesicles.

like an incipient sphacelus, or that sort of black eschar which happens when the cutis has been killed by burns. The pain endured was short, but *very severe*. A poultice was applied, which gave ease; and from this time the vehement pain and straining of the bowels rapidly subsided. I am inclined to think that the ointment made a great impression on the diseased action, but active treatment in other respects being conjoined, it would be partial and perhaps erroneous, to attribute success to it alone. A brief relapse took place in this case, when scarcely any thing more than the ointment was had recourse to, and the malady rapidly subsided. I am satisfied, however, that this mode of application is best calculated to ameliorate *extreme* cases quickly and essentially. But I have seen enough to recommend caution in so using it in the cases of children, that is, over scarifications in epidemic affections, and in very irritable and debilitated constitutions. The second day's age of the pustules is the period at which they appear to pierce the cutis and affect the constitution most decidedly."

The following letter from my relative, the Rev. G. C. Jenner, came too late for insertion in its proper place; but, as its contents are so interesting, you will not dislike seeing it where it is.

MY DEAR SIR,

The benefit which I have received from the use of tartar emetic ointment, in a troublesome complaint of vertigo, with which I have been affected for several years, has induced me to pay a more minute attention to the salutary effects of that remedy. The following case which occurred under my immediate observation, affords such a striking and unequivocal proof of its efficacy, that I could not forbear communicating it, as perhaps it may not be too late to be added to the testimony you are about to publish on this highly interesting subject.

William Holloway, ætat. 26,—Very tall, and of rather a spare habit, about the end of December, or beginning of January last, was attacked with violent pain in the left side, and considerable swelling about the region of the liver, with most of the usual symptoms that attend hepatitis, together with others indicative of pulmonary affection. He was bled, blistered, and took various medicines, under the direction of several medical gentlemen in the neighbourhood. These remedies afforded him a temporary relief; but he soon grew worse, and his malady continued to increase for

six weeks, when I mentioned his case to you. By your advice, I furnished him with some of the ointment of tartarized antimony, and directed him to rub it on the chest. In twenty-four hours, eruptions appeared. The enlargement about the liver soon began to subside, the pain abated, and at the expiration of a month he was able to follow his usual occupation of a mason and bricklayer.

In September last, during the unsettled weather, he went to assist a neighbour in securing his corn; when, after using great bodily exertion, and drinking freely of cider while he was very warm, he felt himself much indisposed, and in two days afterwards was seized with chills. The pain in the side returned, attended with pain on the top of the shoulder and in the chest, shortness of breath, cough, quick pulse (I never found it under 120), and great debility. He now used the ointment, unassisted by any internal remedy. He received it from me with the most enthusiastic rapture, and used it more profusely than I intended, not only on the chest, but on the shoulder, and wherever he felt pain. A large crop of pustules was the result, which matured, and continued to discharge plentifully for nine days, when he was able to resume his work, and is now free from all complaint.

I intended to have given you the particulars of this man's first illness; but I thought, as he took a considerable quantity of medicine, his recovery might have been attributed to that, and not to the ointment. In his second illness, the advantage from the ointment was decisive.

I may here remark, that a twofold benefit was derived from the use of the remedy. One part belonging to my province as a clergyman, and the other to your's as a physician. He was so sensible of the mercy of Divine Providence, bestowed on him through the means of the ointment, that, from being addicted to drinking, and consequently idleness, he is become sober, serious, and industrious; and I hope no temptation will lead him to relapse into his former vicious habits; for if he does, it is more than probable a return of his bodily complaints will soon after be the consequence.

With my best wishes,

I remain, ever truly yours,

G. C. JENNER.

Stone, Nov. 10th, 1821.

P. S. I was very particular in the selection of the tartarized

like an incipient sphacelus, or that sort of black eschar which happens when the cutis has been killed by burns. The pain endured was short, but *very severe*. A poultice was applied, which gave ease; and from this time the vehement pain and straining of the bowels rapidly subsided. I am inclined to think that the ointment made a great impression on the diseased action, but active treatment in other respects being conjoined, it would be partial and perhaps erroneous, to attribute success to it alone. A brief relapse took place in this case, when scarcely any thing more than the ointment was had recourse to, and the malady rapidly subsided. I am satisfied, however, that this mode of application is best calculated to ameliorate *extreme* cases quickly and essentially. But I have seen enough to recommend caution in so using it in the cases of children, that is, over scarifications in epidemic affections, and in very irritable and debilitated constitutions. The second day's age of the pustules is the period at which they appear to pierce the cutis and affect the constitution most decidedly."

The following letter from my relative, the Rev. G. C. Jenner, came too late for insertion in its proper place; but, as its contents are so interesting, you will not dislike seeing it where it is.

MY DEAR SIR,

The benefit which I have received from the use of tartar emetic ointment, in a troublesome complaint of vertigo, with which I have been affected for several years, has induced me to pay a more minute attention to the salutary effects of that remedy. The following case which occurred under my immediate observation, affords such a striking and unequivocal proof of its efficacy, that I could not forbear communicating it, as perhaps it may not be too late to be added to the testimony you are about to publish on this highly interesting subject.

William Holloway, ætat. 26,—Very tall, and of rather a spare habit, about the end of December, or beginning of January last, was attacked with violent pain in the left side, and considerable swelling about the region of the liver, with most of the usual symptoms that attend hepatitis, together with others indicative of pulmonary affection. He was bled, blistered, and took various medicines, under the direction of several medical gentlemen in the neighbourhood. These remedies afforded him a temporary relief; but he soon grew worse, and his malady continued to increase for

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With my best wishes,

I remain, ever truly yours,

G. C. JENNER.

Stone, Nov. 10th, 1821.

P. S. I was very particular in the selection of the tartarized

antimony (emetic tartar) I made use of. It was prepared from your original recipe, published many years ago, in, I believe, "The Medical Communications."

I would here remark, that the tartar emetic which I am using is prepared according to a recipe formed and published by myself thirty years ago. By a very simple process it is done with ease and uniformity, admitting of two degrees of purity; the highest, which furnished it in a crystallized form, being merely a slight extension of the method. Perhaps that afforded by the college is fully efficacious.*

Permit me, by way of conclusion, to recapitulate the principal points of inquiry which are here submitted to your consideration for more complete elucidation.

1. The peculiar influence of factitious eruptions, in contradistinction to simple counter-irritation.

2. To what extent the sympathy of the constitution may differ in eruptive affections which are confined to the surface of the skin, and in those which perforate it.

3. The applicability of the conclusions to different methods of varying artificial eruptions, with the view of calling into action the different degrees of sympathy.

4. How far the peculiar constitutional influence results from the *eruptive* form of the local irritation excited, and is analogous with the laws of secretion.

5. To what extent the analogy between artificial and spontaneous eruptions, in the exchange of diseased actions, obtains.

6. How far the brain and nervous system are the media through which spontaneous eruptive diseases, and artificial eruptions, influence diseased action.

You are to consider what I have here given you as a concise history of the effects of tartar emetic on the skin, as far as I have hitherto considered it as important. Many more cases than I have here detailed have recently occurred, some in their nature so very interesting, that I can scarcely avoid presenting them. Take, if you please, the following outline of two of these, with a promise that you may expect them given more fully, as they are so very

* See the Transactions of a Society for the Promotion of Medical Knowledge.

important, on a future day. One is a case of hysteria, in a young lady of a peculiarly delicate constitution, and attended with symptoms of rare occurrence in this disease. The morbid sensibility of the spinal cord, from its extremity to the brain, was so evident, that merely walking across a room, if her steps were not cautiously attended to, gave an intolerable jarring sensation, from the lower portion of the spine to the brain itself. It was of three months standing, and she had been attended by gentlemen of highly distinguished eminence in their profession ;—but the ordinary remedies availed little. The other was a case of scrophulous ulceration and thickening of the periosteum of the left fore-arm, which, in spite of those remedies, deemed most efficacious, had been gradually advancing nearly for the space of three years, and very little hopes were entertained of the limb's being saved. Seeing the efficacy of the artificial pustule, in internal derangements of the vital organs, I recommended the patient to apply the ointment on the sound arm. After it had produced its usual effect a few days, the wounds assumed a new aspect, and the healing process went on with such wonderful rapidity, that at the expiration of a little more than a month, one out of three wounds was healed, and the other two fast approaching towards it, with a sensible reduction of the thickening of the periosteum ; but here, for the present, I must drop the subject, and hasten to subscribe myself,

My dear CHARLES,

with best wishes,

your faithful friend and servant,

EDWARD JENNER.

Berkeley, Nov. 1821.

REVIEWS.

Quidquid venerit obvium, loquamur
Morosa sine cogitatione. MARTIAL.

ART. XVIII. *A Treatise on Diseases of the Nervous System. First Part, comprising Convulsive and Maniacal Affections.* By J. C. PRICHARD, M. D. Physician to St. Peters' Hospital and the Bristol Infirmary, 8vo. pp. 425. London, 1822.

THIS work, we are informed by its author, "principally owes its existence to his having held, during the ten last years, the appointment of physician to a hospital, where a great proportion of the cases brought under his observation, have belonged to that class of diseases which are the subject of its pages." The author observes, that from facts which had fallen under his notice, he is induced to regard disorders of the nervous system, in the majority of instances, as secondary and sympathetic affections: "they are often, at least," he says, "symptoms of some latent disease in another part of the constitution; and in particular in the state, either temporary or permanent, of those organs which are subservient to the natural functions." He has accordingly divided these affections into certain classes, according to the nature of the primary diseases of which they are symptoms and indications.

In the first chapter, the author gives a rapid physiological survey of the functions of the nervous system, and enters into some metaphysical speculations concerning the connection of the intellectual faculties, with the functions of the nervous apparatus. We shall not, however, stop to give any particular account of the metaphysical portion of this work, but pass on to notice those parts which are more immediately interesting to the practical physician.

In the second chapter, the author gives a pathological survey of

the diseases incident to the nervous system. Having considered the resources for pursuing this investigation; namely, morbid anatomy, the history, dependencies, and mutual conversions of diseases, the *juvantia* and *lædientia*, he enters upon the consideration of the connection of the diseases of the nervous system;—Of apoplexy with paralysis;—Epilepsy with mania;—Mania with epilepsy;—and of vertigo, apoplexy, tremor, somnambulism chorea, hysteria, with other nervous diseases. From a consideration of the mutual conversion of diseases of the nervous system, we are led to the conclusion, says the author, that diseases, “which are so nearly allied as to be liable frequently to supersede or pass into each other, and at other times to exist in the same individual, must, as it should seem when they have their seat in the same structure, depend on similar deviations from the healthy condition of the system.” From an attentive examination of the circumstances that occur in convulsive and maniacal diseases, it would appear that they are all intimately connected with an *irregular state of the circulation in the encephalon*.

“In several of these complaints, as it is well known, the most apparent circumstance in the morbid state of the brain, consists in a disproportionate circulation of blood through that organ, or in an undue accumulation in the head; whether attended with those appearances which accompany inflammatory, or what is termed increased vascular action, or merely amounting to simple congestion. As it is well known that such a state exists in several of these disorders, we are entitled, if the doctrine just laid down be well founded to infer that a similar condition is actually present in other complaints of the same class, although the proofs of it are not so decidedly manifest. This conclusion is, however, so important, that it deserves to be more particularly examined.

In apoplexy, it is well known that the most apparent circumstance in the morbid state of the brain, consists in an excessive action of the arteries belonging to the encephalon; or, at least, in an unusual repletion and distention of the vessels; or what is termed an increased determination to the head; often producing effusions of blood, or of serum, within the skull. If the foregoing remarks are well founded, we have, from this fact, reason to believe that the immediate cause of other disorders, which, by their frequent conversions and transitions, are shown to be allied to apoplexy, consists in a deviation from the healthy condition of a similar kind, though probably very different in degree, and modified by a variety of circumstances.

It is now generally agreed that acute hydrocephalus is an inflammatory complaint, and consists, in the first stage, of increased vas-

cular action* in the brain, or its membranes, which terminates in serous effusion. The inflammatory stage of this complaint displays phenomena, which bear a near analogy to most of the manifestations of disease in the nervous system above mentioned, such as *stupor, vertigo, convulsion, and delirium*. The disease sometimes commences with an *epileptic fit*; at least this is the first thing that announces its existence. In other instances a *furious maniacal delirium* occurs within a few hours of the attack, or of the period at which the presence of the disease first becomes known or apprehended, and while circumstances co-exist which preclude the supposition that it can have given rise to effusion. In these cases we must allow that several remarkable forms of *neurosis* are the products of cerebral inflammation; that the physical condition of the brain, on which they appear immediately to depend, is connected with vascular excitement in that organ. This inference, if correct, cannot fail to afford us an useful direction in cases of a more doubtful character, where the symptoms of congestion, or of the inflammatory state, are less obvious, or altogether elude detection.

The same forms of disease, particularly delirium, coma, convulsion fits, occur in the course of continued fever; and in this instance they may be traced to a condition of the brain, closely bordering upon, if not decidedly consisting in, inflammation. Fits of convulsion in fever are often symptomatic of suppuration in the brain; but I have met with this symptom, when the event proved that no such fatal mischief had taken place." P. 67-9.

Inflammation and vascular action, are indeed very generally the cause of those appearances which are discovered in the heads of such as have died of any of the above enumerated diseases. The adhesions of parts within the cranium, the effusions of serum into the cavities of the brain, the distention of vessels, abscesses, hæmorrhagic effusions into the ventricles, basis, and interstitial openings of the brain, the redness or other discoloration of surfaces, the thickening of membranes, which occur to us in such variety, and in such numerous instances, are all proofs of the previous inflammatory or congested condition of the blood-vessels of the brain. The author also observes, that the doctrine of the *juvantia* and *lædencia*, points in general to the same result; for, it must be admitted, that in convulsive and maniacal disorders, we in general derive advantage from such means as are calculated to restrain the determination of blood towards the head, and to lessen the quantity that is circulating through the brain.

* When I speak of increased vascular action, I only mean to describe that state of the circulation, either general or local, which is commonly so termed, without professing to adopt the pathological theory on which the phrase is founded.

The author introduces some very judicious reflections "on the connexion of disorders of the nervous fabric, with diseased states of other parts of the system, and particularly with complaints of the viscera which lie in the gastric and hypochondriac regions." The ancients paid much attention to this subject. Aretæus says, "*verum præcipuæ furoris et melancholiæ sedes viscera sunt.*"* Among the Germans, this pathology of convulsive and maniacal diseases has been particularly attended to, by Kaempff, Kook, Hufeland, Smucker, Zimmerman, Faber, and others. Prost and Pinel, two eminent French physicians, have also looked to the abdominal viscera for the primary seat of some of the neurosis; and latterly, the writings of Hamilton, Cheyne, Percival, and Burrows, of England, have greatly elucidated the subject. That disorder of the abdominal viscera exerts a powerful influence on the functions of the nervous system and mind, is indeed demonstrated by a multiplicity of conspicuous facts. Worms and other irritating matters lodged in the intestinal canal, produce strabismus, vertigo, and convulsions. Fatuity has been known to arise from the irritation of worms in the bowels. The dissections of Prost, too, are highly interesting, in relation to this point.

Convulsive and maniacal diseases, are distinguished by our author according to the diseased natural function with which they may be connected.

"The fact that such a relation exists, is already well established; my endeavour will be to illustrate this doctrine by a considerable selection of cases and observations, and to make it the basis of distinctions which will be useful in a practical view. It is obvious, for example, that if we can discriminate one class of epilepsies, of which the primary cause is a disordered state of the alimentary canal, from another form of the same disease, which originates in a disturbed and unnatural condition of the functions belonging to the uterine system, this distinction would probably lead to some considerable improvement in medical treatment. The cases which belong to the first class require a different mode of practice from those of the latter; and both require to be treated, in some respects, differently from those affections which are idiopathic, or have their primary seat in the cerebral structure itself: a class of disorders which every new accession to medical experience evinces to be more and more rare. On this principle the facts and observations I have to offer will be distributed. In one department those cases of nervous diseases will be placed which

* De Causis et Signis Morbor: dicet: l. i. c. 47.

originate in a suppression, tardy appearance, or other deficiency of the periodical functions of the uterine system. A second class will include those instances of similar disease which are the result of torpor, or irregular action in the intestinal canal, or of disorder in the functions of the stomach. Another division will consist of some cases in which morbid affections of the brain and nervous system are connected with disease of the liver. A fourth class may comprehend disorders of the animal functions, which may be termed idiopathic, since they arise in consequence of the operation of causes, which act immediately on the functions of the nervous system, or induce primary disease in the structure of the brain. To this class belong, for example, those cases of madness and of epilepsy which arise from the influence of mental emotions, as grief, terror, and the like. Another class of nervous disorders appear to depend on diseases of the heart, whether of function or structure. Several cases of this description have casually fallen under my own observation, but I am afraid they are not sufficiently numerous to establish the fact of this connexion in a manner satisfactory to all my readers. Another division of diseases, distinct from all the foregoing, are those which arise from the metastasis of inflammatory disorders, such as rheumatic and cutaneous inflammation and the inflammation of serous membranes." P. 78-80.

In the third chapter, the author gives a general description of epilepsy. He very justly observes, that although few diseases are better characterized by their symptoms than epilepsy, yet it is extremely difficult "to contrive a definition in a few words, which may comprehend every form of the complaint." In order, therefore, to enable him to give a correct description of this disease, he divides it into two species—the convulsive and tetanic epilepsy. Convulsive epilepsy, which is the most common form of the disease, is thus defined: "A disease manifesting itself in sudden fits, attended with total or partial loss of sense or consciousness, and a general agitation of the voluntary muscles." The tetanic form "is distinguished by sudden fits of coma, or loss of sense and consciousness, without convulsion, but attended with a tonic spasm of the system of voluntary muscles; the whole trunk becoming, during the fit, rigid and inflexible." To these, our author observes, may be added a third species of paroxysms, "consisting of sudden attacks of coma, sometimes preceded by vertigo, but, in other instances, coming on without any premonitory symptoms." In this form of epileptic paroxysm, the muscular system remains quiet relaxed, the patient falling to the ground, and remaining for a time in a state of insensibility, resembling sleep. Our author observes

that this last species may be termed "*Leipothymia*, or more particularly epileptic *Leipothymia*," in order to distinguish it from somewhat similar paroxysms, which fall under the description of apoplexy.

The author next proceeds to give an outline of the history of this disease. His description of the convulsive or common form of the disease, does not differ from that which is contained in our best authors. In the tetanic form of epilepsy, the patient is seized suddenly; his limbs are stretched, and the whole trunk extended and fixed by a rigid spasm; the eyes are widely open; not reverted, but staring frightfully; the pupils contracted and quite insensible to the stimulus of the strongest light: "*Erigitur quoque penis in infantibus; in adolescentibus semen ejicitus est, et sæpius urina ad magnam distantiam prorumpit.*"

The symptoms of epilepsy are exceedingly various. The symptom in which there is the greatest degree of regularity, is the stupor or insensibility which accompanies the paroxysm. It generally amounts to perfect coma. In a few cases, our author has noticed a slight degree of consciousness remaining throughout the whole paroxysm.

Epileptic fits most commonly occur during sleep. Some patients are subject to these attacks equally during sleep and when awake: "others experience them only when asleep, and, for the most part, soon after falling asleep." The author saw a case, in which a fit hardly ever failed "to seize the patient immediately after he had fallen asleep. And this occurred even when he endeavoured to gain the repose of a few moments during the day-time." Both sexes appear to be equally exposed to the attacks of this disease.

"There is no temperament which is in a very decided manner more subjected to epilepsy than others. I have witnessed its appearance in every variety of habit, from the most exquisite examples of the sanguine to the most strongly marked melancholic. I have, however, observed a greater proportion of cases in persons of blooming and delicate complexion, and of light flaxen hair: and this remark particularly applies to a form of the disease which will be hereafter distinguished, and in which the proofs of a general plethora of the sanguiferous system are, perhaps, the most evident. At no period of life is the body exempt from the attacks of this malady, but there are several occasions at which its

commencement is more frequent than at others. It occurs in very young infants ; in which case it generally arises from irritation in the bowels, and speedily disappears as soon as the exciting cause is removed. Again, during the first dentition, many children are assailed by it; and there is often in all, or many children of the same family, a predisposition to fits, when under the irritation excited by this process. But the disease thus produced generally ceases soon after the first dentition is completed. Epilepsy often appears, for the first time, about the eighth, or from that to the twelfth year; and it is under these circumstances that the greatest danger exists of its becoming an habitual disease. There is still a prospect of its subsiding in males at the age of puberty, and in females at the establishment of the catamenia; but if these periods pass over, and the disease subsist through the changes which the habits of the constitution then undergo, there is great danger of its continuing through life. But if the appearance of the catamenia sometimes assist the constitution to get rid of this disorder, it much more frequently gives rise to it; or, rather, the laws of the animal economy require a new set of operations to be set up in the system at this time, in the place of which, when they are not regularly performed, a variety of tumultuous efforts ensue; and among phenomena of this class none is more frequent than epilepsy. In fact there is no time of life, in females, at which it so frequently makes its appearance." P. 94-95.

Our author again alludes to the intimate connection which subsists between the various disorders of the nervous system. A predisposition to epilepsy, he observes, "will sometimes evince itself in certain members of a family," while their nearest relatives are affected by other maladies of the same class; as palsy, or con-nate idiotism.

"But the disorder to which, of all others, epilepsy would appear, from this and similar observations, to be most nearly allied, is mania. I believe these diseases more frequently pass into each other, and, what is more to our present purpose, more frequently appear in persons related to each other by consanguinity, than any others of the same class; except those affections which are strictly considered as merely modified appearances, or as sequelæ of the same disease." P. 96

Terminations and Consequences of Epilepsy.—Epileptic fits often prove suddenly fatal in children, leaving no obvious traces of a morbid condition of the encephalon. In persons of more advanced age, death rarely occurs, unless the paroxysms recur very frequently and with great violence. When the fits are very severe, they sometimes give rise to paralysis, amaurosis, and other affec-

tions depending on lesion of the brain. Whatever be the degree of violence of the paroxysms, if they recur very frequently, and the disease is of long continuance, the patient perhaps never escapes having the acuteness of his mental faculties greatly blunted. At first the memory becomes weak, which is gradually succeeded by imbecility, and finally complete fatuity. There is another mental affection, which occasionally accompanies epilepsy, and which has been termed "*mania epileptica*." This affection resembles the delirium of phrenitis, "and generally appears when the patient is expected to revive from the comatose state consequent on a severe fit; sometimes, however, it appears without any previous fit."

"The face is flushed, and the aspect of the patient is like that of a man under intoxication; he attempts to start from bed and run about, and on being withheld, vociferates and endeavours to overcome resistance. Sometimes an appearance of maniacal hallucination displays itself, but more generally the disorder resembles phrenitic delirium. It commonly continues one, two, or three days, during which the patient requires confinement in a straight waistcoat, and then gradually subsides, and the patient returns into his previous state.

A remark which I have made, connected with this affection, is, that it has given rise to a suspension in the recurrence of the epileptic fits. This fact may be noticed in the history of a case inserted below." P. 100.

Pathology of Epilepsy.—The immediate cause of an attack of epilepsy, or that physical change which is the immediate precursor and occasion of the fit, is "a preternatural influx of blood into the vessels of the encephalon, or an unusual fulness in some part of the vascular system of that organ." That this is the case, he infers: 1st. From "the intimate relation and frequent mutual transitions or conversions of disorders of the nervous and cerebral system, connected with the certain knowledge which we have attained, that several maladies of this class depend on such a state of circulation in the brain." 2d. From a comparison of the circumstances, which are known to give rise to epileptic convulsions, and which produce congestion in the vessels of the brain.

"Thus epilepsy often occurs in persons who have rapidly increased in bulk and fulness of habit: in men of indolent habits, who live luxuriously: the quantity of blood in the body being exces-

sive, a slight change in its distribution occasions excessive local plethora.

It occurs in females who labour under suppression or retention of the catamenia, or when the flow is scanty and difficult. Such women are chiefly subject to the attacks at the periods of menstruation, when it is well known that, in the defect of the natural relief of the system, a variety of morbid determinations take place, sometimes to the vessels of the stomach, occasioning violent gastrodynia with hæmatemesis; sometimes to the pulmonary vessels, giving rise to hæmoptysis; at others to the external vessels of the head, when the consequence is a profuse epistaxis: all these phænomena have been witnessed over and over again by every medical practitioner. When epileptic fits appear under the same circumstances, we have reason to believe that they arise from an analogous cause, viz. a determination to the vessels of the brain.

The appearance of epilepsy from metastasis is a phænomenon which leads to the same inference. After the repulsion of cutaneous eruptions, the drying up of old sores or artificial discharges, the retrocession of gout, rheumatism, or inflammations of serous membranes, it is well known that inflammatory affections of various organs and various local determinations frequently ensue. And epileptic fits, as we shall in the sequel observe, occur under all these circumstances. The inference is obvious" P. 102.

3dly. The symptoms of the paroxysm itself, indicate a determination of blood to the brain; the flushed and turgid face; the violent beating of the carotids; the dilated pupils, stupor, and insensibility attending the fit, all demonstrate such a determination to the head. 4thly. The same inference is to be drawn from the consequences of epilepsy. We often, for instance, see cases of this disease, "in which the brain has sustained so much injury during a paroxysm, as to leave a permanent fatuity, or palsy of some part of the muscular system, or of some organ of sense." Dissection also discloses appearances which show the previous congested and inflammatory condition of the vessels of the brain.

In the 6th chapter, our author treats of the general phenomena and nature of mania. Madness does not consist, as some have supposed, in an error of the judging or reasoning faculty, but in *reasoning correctly from erroneous principles* —(LOCKE.)

"I believe," says Dr. Prichard, "it will be found requisite, in attempting to define or form a correct idea of the nature of madness, to exclude, as before hinted, all reference to the state of the judging or reasoning faculty. Indeed, the more I reflect on this subject, the more nearly I approach to a conviction that the judging faculty is in no-

wise involved in the calamity; that no defect of the reasoning power constitutes any part of madness.* Men indeed arrive every day at such diversities of opinion from the same data, that it seems impossible, by any rule or criterion, to define the limit of error which might be allowed without consigning the individual to the imputation of insanity. Hence the difficulties with which this subject has been unnecessarily encumbered." P. 119-121.

The faculties of the mind which appear to be almost exclusively involved in mania, are memory and imagination, or reverie. "The habit," says our author, "which characterizes a lunatic, is that of confounding the results of these two mental operations, and mistaking the ideas of reverie for the impressions of memory and reflection." Upon this subject the author introduces some ingenious and interesting observations; but as we wish to confine ourselves chiefly to the practical portion of the work, we cannot enter into any detailed exposition of its speculative parts.

Having made some general observations on the different varieties of madness distinguished by authors, and on "the pathology of the brain in madness," he proceeds to practical consideration of epilepsy.

The author, as we have already stated, divides epilepsy in varieties, according to the diseased natural functions with which they

* A very remarkable and interesting case of insanity is recorded in the Gentleman's Magazine for 1762, which strongly exemplifies the observation that the reasoning power is retained by lunatics, and that they are capable of arguing correctly on the premises furnished by their hallucinations. This is the case of Mr. Simon Browne, a dissenting teacher, of great intellectual powers, who became convinced, to use his own expressions, that he had fallen under the sensible displeasure of God, who had caused his rational soul gradually to perish, and left him only an animal life in common with brutes; that it was therefore profane in him to pray, and incongruous to be present at the prayers of others." In this opinion he was inflexible, at a time when all the powers of his mind subsisted in their full vigour. Being once importuned to say grace at the table of a friend, he excused himself many times; but the request being still repeated, and the company kept standing, he discovered evident tokens of distress; and, after some irresolute gestures and hesitation, expressed with great fervour this ejaculation:—"Most merciful and Almighty God! let thy Spirit, which moved upon the face of the waters when there was no light, descend upon me, that from this darkness there may rise up a man to praise thee!" But the most astonishing proof of his intellectual excellence and defect is, "A Defence of the Religion of Nature and the Christian Revelation, in Answer to Tindal;" with a dedication to the queen, in which his hallucination discovers itself.

are connected. In the 5th chapter, therefore, he gives the pathology and treatment of "*Epileptic and Maniacal cases depending on the state of the uterine functions.*" Before he proceeds to consider the symptoms of these affections, he introduces some general observations on the pathology of diseases in the nervous system that depend on disordered uterine function, "or on that state of the constitution which coincides with the appearance or cessation of the catamenia." It is well known that the living system has the power of producing variations in the distribution of blood; "in other words, that the proportional quantities of blood flowing towards different parts are subject to changes, which take place according to certain laws." One of the most important circumstances, connected with this fact, is, "that particular determinations supply the place of, and in a certain way succeed each other; and that after one determination has subsisted for a time, so that the energy of the system has been exerted during a period in one particular direction, when it ceases, a necessity for some supplementary or vicarious action seems to have been created; so that, if, owing to any impeding circumstance, a new healthy determination does not ensue, a morbid one is very apt to follow." Thus the sudden drying up of an issue, or old sore, is very apt to give rise to a determination to the head, producing vertigo, headach, and sometimes apoplexy. So also, after habitual hæmorrhoids has been suppressed, the other hæmorrhages, or undue determinations, are apt to ensue. With regard to the menstrual evacuations, these observations apply with equal force.

"The female constitution being so by nature arranged, if from any accidental cause the vascular fabric of the uterus does not assume its proper action, at the time when it comes to hold an important place in the system of natural determinations; or if, after it has performed its office, this function becomes suspended or suppressed, all the evils follow, which, from the preceding observations, might be calculated upon. Morbid determinations take place in consequence. These are various in kind. The pulmonary system, as it is well known, often suffers; not unfrequently the gastric; and the stomach is then the chief seat of morbid symptoms; we have gastrodynia and hæmatemesis: but no other part of the constitution is assailed more generally than the nervous fabric, and we thence witness the phenomena of epilepsy, hysteria, mania, apoplexy, and a variety of other diseases

"These considerations may be applied, perhaps, still more directly and obviously to explain the origin of various diseases which

occur soon after delivery. A considerable and long continued determination to the uterine system having ceased, other supplementary actions speedily ensue. Sometimes these have the character of healthy processes, as when a free and copious production of milk takes place, and is followed in due time by a restoration of the catamenia. In other instances the determination gives rise to disturbance in the economy, or to morbid phænomena; as when puerperal peritonitis, or phlegmasia dolens occur, or some pulmonary or other chronic disease, which gestation had suspended, becomes now renewed. If the brain is the part that sustains the impetus, and there be any predisposition to a maniacal state, the same cause gives rise to an attack of puerperal mania." P. 145-146.

History of Uterine Epilepsy. This disease commonly affects young females of a sanguine temperament. It generally appears about the age, when the catamenia commence, sometimes, however, it takes place at a more advanced age, when from some accidental cause the menses cease to appear.

"In many instances the catamenia have taken place naturally for some months, when, owing to exposure to cold or damp weather, or wetting the feet, at the period of their recurrence, and while they are actually taking place, a suppression follows, and epileptic fits are the consequence. In other cases, and without any assignable cause, the flow is, at some particular period, much more scanty than usual, and of an unnatural quality; and then about the commencement, and sometimes even after the orgasm has passed over, the head becomes suddenly affected with pain, strong pulsation, vertigo, and epileptic fits ensue. In other examples, the catamenia altogether fail to make their appearance at the proper age, and the person becomes subject to disorders of the head at the same time and to epileptic fits, which continue until the function of the uterine system displays itself, and often more or less severely during life." P. 148-149.

Uterine epilepsy does not often differ in the character of its fits from that of the fits of epilepsy arising from other causes. The character which, according to our author, appears "to belong more particularly to the paroxysms of uterine epilepsy, is the form which he has termed *Leipothymia*." This form of epilepsy is termed hysteric epilepsy by some writers; and the term does not appear to be an improper one. Our author next gives a brief account of several cases of this variety of epilepsy, for the purpose of affording an exemplification of the practical rules and inferences which he afterwards adduces. We shall extract a few of these cases.

"MARY LANING, admitted in-patient at the Infirmary, January

18, 1821. A girl of fair, rather florid complexion, dark hair and eyes, aged eighteen years. About six weeks ago she was seized, in the afternoon, with a convulsive catching of the right arm, which continued all the evening to increase, and at night she had an epileptic fit. The same symptoms have recurred twice since that time. The last fit was on Monday night last. (This day is Thursday.) She has a severe headach, which has continued from the first fit. Her pulse is rapid, and beats violently in the carotid.

Natural functions.—Bowels regular; tongue white. Catamenia first appeared two years ago, but never came regularly; recurred after long intervals. The last time she had them was two months ago, when they were very scanty: before that time they had been wanting several months.

Ven. Sec. et fluent sang. \bar{z} xvj.

Baln. Calid post V. S.

Pil. Cath. omni nocte.

Mist. Sal. Antim.

19. Head relieved. Pulse full and strong. Bowels only twice moved.

Repet. Venæ Sectio.

Mist. Cathart. ter indies.

22. Bowels very open; blood not inflamed; complains of pain in her left arm.

Pil. Cath. o. n.—Haust. Cath. manè quot.

Mist. Sal. Antim. ter indies.—Baln. Calid.

25. On the morning, after going into the warm bath, complained of a sense of coldness in her right thigh, which still continues. Sometimes the pain troubles her in her arm. Otherwise she feels well.

Repet. Ven. Sec. (Blood not inflamed.)

Feb. 3. Pulse full and strong; violent pain in her head and in her right thigh.

Venæ Sectio repet.

Fiat Fontic. in brachio.

8. Pain and sense of constriction in the epigastric region.

Empl. Lyttæ ad epigast.—Mist. Aper.

13. Has lately fallen down two or three times, as if seized with syncope: immediately recovers herself. No catamenia have yet appeared.

Cucurb. Cr. Nuch.—Baln. Calid. alt. noct.

Pil. Cath. o. n. Emuls. Tereb.

17. Cupping not performed: she is, however, better. Cannot take the emulsion of Turpentine.

23. Is tolerably well, but has had no catamenia.

Ferri Carbonat. ʒss. ter indies.

Mist. Cathart. quotidie mane.

March 6. No catamenia. Omit Ferri Carb.

Tinct. melampodii, g^{utt}. xxx. ter indies.

Baln. Calid o. n.

Mist. Cath. p. r. n.

14. Repet. Tinct. Melamp.

Ol. Tereb. Rect. ʒi. o. n.

22. Catamenia flowing scantily for two days. Complains of shooting pains in her hands.

24. Is relieved.

April 16. Feels herself quite well, but has had no catamenia.

Mist. Myrrhæ cum Ferro. ʒij. ter indies.

28. Catamenia have appeared and flowed naturally for two days. She now appears quite well. Has become a nurse in the Infirmary.

Observations.—In this case the connexion of epilepsy, together with other symptoms of determination to the head, with a want of the catamenia, is clearly marked. In women who menstruate irregularly, the attacks of epilepsy often commence, as in this instance, after a scanty flow. It is when the system is making an effort that the danger of a misplaced determination occurs.

The effect also of the plan recommended, in relieving the system, is decisively marked in this instance. The epilepsy was cured by relieving vascular plethora." P. 152-154.

"ELIZABETH DOWNTON, æt. 15. April 13, 1820. A girl of sanguine temperament, fair complexion, brown hair. More than twelve months ago her skin became beset with patches of the lepra vulgaris, which chiefly occupy the legs and thighs. Her belly is tumid. She complains of pain on a moderate pressure being made below the umbilicus, and in the left hypochondre, at the region of the spleen.

About twelve or fourteen months ago, but subsequently to the appearance of the lepra, she was attacked by epilepsy. The fits occurred frequently, generally twice or thrice in the course of a week, and she was sometimes much convulsed in them. At that time she had never menstruated. The catamenia first made their appearance about six months ago; and previously to this change taking place the fits ceased, and have not since troubled her. The abdomen has been tumid for several months. Her appetite is deficient, but she says that her bowels are regular. Her pulse is natural.

Pil. Hyd. gr. x. bis die.

14. Pulv. Cath. to open the bowels.

22. Is better. Her appetite good. Bowels not painful on pressure.

Repet. Pil.

Mist. Sal. Antim.

26. The eruption continues nearly as before; in other respects she is better. The catamenia are beginning to flow.

She was ordered to take Pulv. Febrif. gr. vj. ter in dies, and to use a warm bath, as soon as the catamenia should cease.

28. She went into the warm bath by mistake, while the catamenia were beginning to flow. The effect was an immediate suppression, followed by an attack of epilepsy, which occurred yesterday. To-day she has had a second fit.

Let her have some cold water thrown on her head.

R Æther.

Spir. Ammon. Fœt. M.

Capt cochl. parv. j. subinde.

May 1. She has had fits every night since the suppression; had one last night.

V. S. et fluant sang. $\bar{3}$ xvj.

Enema ex Ol. Terebinth. $\bar{3}$ j.

Statim injic. et omni nocte repet.

Tinct. Asafœt

Tinct. Valerian. Volat. aa. $\bar{3}$ ss. 4ta quâque horâ.

6. Is pretty well. No fit since the injection was first used, and the bleeding.

10. Has been well since last report, but is now threatened with a fit: viz. by an appearance of agitation, which precedes the attacks.

Spir. Ammon. Fœt. $\bar{3}$ j. when the agitation comes on.

Emuls. Terebinth. ter indies.

Enema omni nocte.

12. She had a slight fit on the day of the last report.

16. V. S. et fluant sang. $\bar{3}$ xvj.; no buffy coat.

20. Had yesterday a violent fit.

V. S. ad $\bar{3}$ xvj.

27. Pulv. Cath. o. n. Mist. Cath. ter indies.

June 4. She says that the eruption sometimes goes in, and that her head is then worse, and the fits come on. To-day she has complained of headach; her pulse is very full. She was ordered to be bled. A small quantity was obtained, which, however, afforded relief.

V. S. et fluant sang. $\bar{3}$ xvj.

Episp. ad Nucham.

Pil. Cath. 2. o. n. Mist. Aper.

Ung. Antim. Tart. super epigast.

7. The head relieved by the bleeding, although a small quantity flowed.

Yesterday the catamenia began to flow, without any symptom of

disorder in the system. No fits have occurred for a considerable time.

15. The catamenia were copious, and continued their usual time. No symptom of disease has appeared. She has no ailment, except the remains of the leprous eruption. Discharged.

This girl went out well, and had no recurrence of her fits during half a year. Afterwards her bowels became much disordered, and her fits returned; but were then unconnected with the catamenia." P. 157-159.

"ELIZABETH COLE, a girl of slender habit, fair sanguine complexion, brown hair, aged sixteen years, who has been about two years subject to epileptic fits, was admitted an out-patient at the Infirmary on the 10th of June, 1819.

The fits were said to trouble her very frequently, sometimes occurring repeatedly in the course of a day: at others, she passed some days without any attack, and she supposes she has been free from them as long as a fortnight. She thinks that the fits are more troublesome about the period of the catamenia; which flow, as she says, sparingly, and are accompanied with much pain. Her aspect is imbecile.

Fiat Ven. Sec. et fluent sang. \bar{z} xvj.

Pil. Cath. omni nocte.—Mist. Aperiens.

16. Several fits in a day. Pulse strong and quick.

Fiat V. S. fluent sang. \bar{z} xij.

Warm Bath, or Pediluvium.

Repeat the Cathartic Pills at night.

\mathcal{R} Pulv. Antim. gr. v.

Opii, gr. $\frac{1}{4}$. Quartâ qq. horâ.

30. Several fits in a day. No headach.

V. S.

Fiat Setac. in Nuchâ.

Pulv. Cath. o. n.

Mist. Cath. ter die.

July 8. No relief. Pulse full and quick. Fits returned twice about three days ago, and to-day four times.

Emuls. Tereb \bar{z} j ter indies.

14. No fits for ten days. Nausea. Rejects her food.

On the 27th of September she was admitted an in-patient. The fits now occurred frequently; generally in three days.

She was ordered to go into the shower bath every morning; and to take every third hour a draught of Camphor. Julep, with Sp. Ammoniaë Fœt. On the next day her head was shaved, and she took a cathartic powder.

29. She has had several fits to-day; her pulse is in general frequent and rather full. I resolved now to try the effect of the evacuating system. Frequent venesections were prescribed, with purging, blisters to the neck, &c. The disease sometimes appeared

mitigated by bleeding, but the fits continued to recur every third or fourth day, although this plan was pursued as far as it seemed safe and expedient. In the following month she seemed to derive some temporary benefit from a seton in her neck and a shower bath. She took the Oil of Turpentine and the Ammoniated Tincture of Valerian; topical bleeding was ordered from time to time. Blisters were of service to her in so far that they relieved the pains in her head.

As blisters seemed to relieve her, I determined to try more effectual drains, and ordered a part of the scalp, over the vertex, to be rubbed with a dry caustic.

Feb. 3. Seems to be a little relieved since the discharge from the issue on the head.

12. Fits as violent and frequent as formerly.

Apply cupping glasses to the shoulders, and draw blood.

16. A severe fit last night. Pulse frequent; not affected by the Tinct. of Digitalis, lately administered.

Try the infusion of digitalis, giving \mathfrak{z} ss. every sixth hour.

24. She has again been delirious, during which time the fits did not trouble her.

29. Under the full effect of digitalis. Pulse intermitting: stomach rejects every thing. Fits as before. It is evident that neither the drain nor the digitalis relieve her.

Dry up the issue. Omit the present medicines.

Solut. Arsen. Dr^{is}. Fowler.

No material alteration took place until the 7th of March, when she expired under a fit of the usual character.

Appearances observed on Dissection.—On the left side of the head, between the membranes of the encephalon, a slight effusion of amber-coloured fluid was observed. In the vessels of the pia mater, on the same side, a number of small globules of air were seen, resembling a string of beads: these were clearly proved to be contained in the blood-vessels.

In the ventricles of the brain about \mathfrak{z} j. of fluid was discovered, and a considerable quantity between the medulla oblongata and its coverings. An effusion, which was much more copious than that which was proper to the brain, appeared to extend down the spinal column.

The cineritious part of the cerebellum was preternaturally soft.

But the observation, that is probably the most important with respect to the pathology of this case, is the following:—

The left lateral sinus, through its whole length, was filled up by a substance, very different in its nature from a recent coagulum, and apparently consisting of a deposition of lymph, which had become organized. It appeared so completely to occupy the calibre of the sinus as to have entirely impeded the transit of blood through it.

In the thorax were found, in each cavity, about four ounces of fluid: in the pericardium six ounces. In the abdomen, the villous coat of the stomach, about mid-way between its extremities, was disposed in folds, from the contraction of the muscular fibres; giving it internally the shape of an hour-glass. On the interior surface a number of small red patches, of various hues, apparently occasioned by exudations of blood from the villi of the internal coat. The liver was rather pallid, but not otherwise of diseased appearance.

Remarks.—The morbid appearance found in the lateral sinus, seems to be adequate to account for a great part of the distress this poor woman had suffered in her head, and for the most severe of her symptoms. The impeded circulation accounts for the deposition of serum on the surface of the brain.

The history of the case leads to the same conclusion. Although a variety of measures were adopted in the long course of this case, the patient never experienced any, even temporary relief, except from measures calculated to deplete the vessels of the head. Such were general and particularly topical bleedings; blisters; drains of various descriptions; the shower bath, and most of the means of reducing general and local plethora.

When we consider that she became affected with this disease about the time when menstruation commences, it seems probable that the effort of the constitution in establishing this function, or the irritation of the sanguiferous system, which accompanied its first appearance, gave rise to the primary disease: and this conjecture is strengthened by the remark, that the fits were more frequent about the menstrual period. Probably that degree of disorganization was soon produced which prevented the assistance of any remedies in restraining the epileptic fits." P. 176–180.

Treatment of Uterine Epilepsy. As the measures which are to be adopted in cases of this variety of epilepsy "differ according to the circumstances of the uterine function under which the disease takes place," our author arranges his observations on its remediate treatment under different heads.

He considers in the first instance the measures that are to be adopted, in cases depending, or accompanied by a total suppression of the menses. All these cases "must be considered, as denoting an effort of the system to establish a natural determination; which being diverted from its proper course, gives rise to morbid congestion in the brain, the obvious consequences of that state."

"The practical indications are, first, to relieve the morbid determination to the head; secondly, to restore the natural determination to the uterine system: or, thirdly, if that cannot be done, to bring the constitution into a state in which the injurious effects of amenorrhœa are felt in a less degree." P. 182.

Blood-letting is our principal resource for the first indication ; it, in general, gives immediate relief to the pain and oppression in the head, and sometimes speedily restores the catamenia. The author makes the following interesting observations on the effects of bleeding in inflammatory affections.

“ If a person labouring under an attack of pneumonia, hepatitis, or other inflammatory disease, is freely bled, so that either absolute syncope, or a degree of relaxation approaching to syncope, be induced, one of the following effects will commonly ensue :— First, The morbid determination to the inflamed part, or the particular state of the vessels in which the disease consisted, is entirely overcome, and the disease will be found to be removed : this event ensues most frequently when venesection has been employed within a few hours after the commencement of an inflammatory disease : or, secondly, the pain, and other signs of local inflammation, still remain in the part affected, and require other efforts to remove them : or, thirdly, when the patient recovers from his fainting state, and the pulse regains its force ; or sometimes, after an interval of sleep or collapse, the disorder of the part originally affected is found to have entirely subsided, but a new morbid determination to some other part of the system is discovered, sometimes of less importance, at other times endangering life in a greater degree than the original affection : and this new disease often requires a repetition of bleeding, which, in its turn, ushers in a fresh attack in some other organ.

It is needless to adduce particular facts as exemplifications of the last assertion, as every medical practitioner must repeatedly have witnessed such phænomena. They occur most frequently in cases of inflammation of the external parts, particularly of the joints ; such as are denominated rheumatic : but they are also frequent in inflammatory disorders of a different description. If a patient recently attacked by pleurisy, which is confined to one side of the thorax, is bled until syncope supervenes, the disorder often shifts to the other side. After inflammation of the peritonæum has been suddenly relieved by bleeding, the head is often attacked. In short, the migratory tendency of many inflammatory disorders is a trait extremely well known ; and it is equally well known that the change of determination is very often an immediate consequence of bleeding.

It must therefore be allowed that evacuations of blood, sufficient, with respect to quantity, to reduce the action of the heart and the circulation, have not only this immediate effect, but have also a secondary effect, viz. they give rise to a change in the distribution of blood to various parts of the vascular system. In other words, they excite new determinations, which in general show themselves immediately after the collapse, induced by the evacuation, ceases. Now the new determinations which arise after bleeding are some-

times morbid phenomena; sometimes the restoration of natural and healthy processes. Instances of both kinds occur in the recitals of the foregoing cases. In some instances the natural determination to the uterine system, and a flow of the catamenia, followed; in others, an attack of phlegmasia or painful affections of the joints. Either event was salutary in cases of uterine epilepsy." P. 183-185.

The venesection should be performed while the patient is sitting up, and the blood suffered to flow until syncope begins. The good effects of bleeding are much promoted by immersing the lower part of the body in a bath of the temperature of from 96° to 98°. It produces general relaxation, and determines the blood into the cutaneous and superficial arteries. It is also particularly calculated to promote the determination of blood into the vessels of the uterus, and to favour the flow of the catamenia. Frictions with flannel, to the back, loins, and abdomen, should be used while the patient is in the bath. She should remain in the bath until she begins to feel exhausted. When put to bed, warm diluent drinks ought to be employed. We may also derive much advantage from stimulating clysters. For this purpose, an ounce of Spir. Terebinth. with an ounce of Oleum Ricini, is an excellent enema. Our author has never known blisters applied to the sacrum and over the pubes of any service. Among the emmenagogues, he considers Spir. Tereb. as the most potent we possess.

"In cases of maniacal affection, connected with defect of the catamenia, it has very considerable powers, as I have ascertained by a sufficient number of experiments. In epileptic cases it ought not to be neglected. The form in which it can best be given, in this view, is in an emulsion, each draught containing from half a dram to two drams of the oil, to be taken three times in a day; or the oil may be given in the dose of two drams every night." P. 187-188.

If we do not succeed in restoring the uterine function, "all that remains to be attempted is to fulfil the third indication;" which is to bring the constitution into such a state as to render the diseased uterine function the least injurious to the system. For this purpose we must obviate the return of a plethoric state of the system; which may be done by an antiphlogistic regimen; exercise in the country, and frequent changes of air; the regular employment of laxatives; artificial drains, by issues or setons. Drains of this kind have a very considerable influence in reducing plethora; but in in-

stances of uterine epilepsy, our author observes, they appear to have a further efficacy than this.

‘In several of the foregoing cases it may be remarked, that a new morbid determination taking place in the system, suspended or removed epilepsy in cases in which no other remedies succeeded. In some instances, as after bleeding, a disease took place in the lower extremities, resembling phlegmasia dolens; in some rheumatic affections; in others cutaneous diseases occasioned a mitigation of the epilepsy. In all these instances the new disease is vicarious, and suspends the fits of epilepsy, according to a principle well known in pathology. This consideration, as well as the result of actual experiment, indicates the propriety of establishing by art a supplementary disease or drain; which, in some degree, will probably answer the purpose of the natural one.’ P. 189.

Pregnancy has been known to remove disorders of this kind. But even if pregnancy should not take place, marriage, our author thinks, would very frequently remove the disease. Hoffmann mentions two cases of this kind.*

Epilepsy connected with dysmenorrhœa requires a treatment somewhat different. “Moderate bleedings, and those means which promote relaxation of the system, and a determination to the uterus, are principally to be relied on. Bleeding should not be carried to the extent of inducing syncope, if there is any flow of the menses actually subsisting, as this is sometimes followed by a complete cessation of the discharge. The bleeding should be so conducted as to produce a perceptible relaxation of the pulse. This measure will generally give immediate relief to the pain and oppression of the head, and remove the constriction of the uterine vessels, and render the flow of the menses free and natural.” In addition to this, the measures already mentioned for promoting a free discharge should be adopted.

Of Maniacal Affections, connected with States of the Uterine Function.—Mania is connected in a variety of modes with deranged uterine function. It is often consequent to a sudden suppression of the menses, from exposure to cold, or powerful mental emotion. These attacks are sometimes transient, reason returning when the catamenia are restored. Sometimes, however, the disease is more permanent, and continues obstinately, although the catamenia are re-established. Some women, particularly those of irritable habits, and “that condition of body which generally ac-

* Opera, tom. iii. p. 21.

companies the highly sanguine complexion," display much excitement and irritation, at the period of menstruation. This happens more particularly in cases of *Dysmenorrhœa*. In instances of this kind, symptoms of hysteria are very common; sometimes "maniacal impressions take hold of the mind; an unusual vehemence of feeling and expression is observed, depending on unnaturally vivid impressions on the fancy; or there is torpor and dejection of mind, with a despondent disposition, and often with some melancholy hallucination."

The indications for the treatment of mania occasioned by suppression of the catamenia, do not differ from those mentioned above, for the cure of uterine epilepsy. "In uterine mania, however, more may be expected," says our author, "from the effect of stimulating emmenagogues than in analogous instances of epilepsy; and frequent and copious bleedings are not, in general, so necessary or so safe, in the former disease, as in the latter." The most useful emmenagogues in uterine mania are the tincture of black hellebore, and the oil of turpentine. The latter is generally the most efficacious.

"This medicine is a most powerful and diffusible stimulant; it acts on several of the secretions, particularly on that of the kidney, and often occasions even hæmaturia. There is no other substance more likely, from its known properties, to exert an influence on the secretive action of the uterus. With this view I have prescribed it in the form of an emulsion, each dose containing from half a dram to a dram of the rectified oil, to be taken three times in a day. Sometimes I have preferred to give two drams of the oil at night, or a double quantity during the day, together with some brisk purgative. Clysters of *Ol. Ricini* and *Ol. Terebinth.*, of each an ounce, are often successful in bringing the same result." P. 202.

In other respects the treatment of this variety of mania does not differ from that of uterine epilepsy.

Our author considers the phenomena of *Puerperal Mania*, as dependant upon "the same principle in pathology, to which he has referred those of maniacal affections, connected with dysmenorrhœa, or the suppression of the uterine function." We shall extract the following case of puerperal mania, in which the disease was immediately removed, on the re-appearance of the catamenia.

"**MARTHA COOK**, admitted Feb. 1, 1816. A married woman, aged thirty-eight years, who has followed the trade of a milliner; of san-

guine temperament, light brown hair, blue eyes, fresh complexion, disposition gentle, habits temperate and domestic. She has had six children. After the birth of the two last she was attacked by a disorder, which is said to have been puerperal fever, and became maniacal.

During the first fortnight after the last delivery, she appeared to be doing well. At that period the maniacal symptoms showed themselves.

Feb. 2. Head to be shaved; twelve leeches to be applied to the temples.

Ol. Ricini, \mathfrak{z} ss manè quotidie.

8. Continues nearly in the same state; is very noisy: sometimes shrieks out violently, as if suddenly hurt.

Emplast Lyttæ ad Caput.

Repet Ol. Ricini.

15. No perceptible alteration in the maniacal state. Bowels open. Thirst considerable.

Baln. Calid. hâc vespere.

16. The use of the hot bath has occasioned a profuse flooding. Her head is relieved, and she talks more rationally.

Large pads, wetted with vinegar and water, applied over the pubes.

18. The discharge continues, but is less in quantity. The mental derangement is relieved.

Mist. Aperiens Acida. 4ta qq. h.

22. Is able to sit up in bed; is extremely languid. Pulse 64, and small. Discharge considerably abated. Appetite better. She talks rationally.

Bitter Tonic Mixture.

Repeat the Aperient Mixture if the bowels are constipated.

March 2. Able to walk about the ward without any assistance. Has meat and a pint of porter daily.

Continue the Mixture.

24. Discharged quite recovered.

Observations.—In this case the maniacal affection continued undiminished until a flow of the catamenia was occasioned by the use of the hot bath; after which it immediately subsided, and sanity was soon restored. This fact leads to the inference that, in similar cases, the way to attempt a cure is to endeavour to restore the natural determination to the uterus, by which the whole system obtains its habitual and periodical relief: and if this cannot be done, to supply the place of the natural determination by the measures which, in other instances, we have ascertained to be the best supplements for it." P. 204–206.

In the sixth chapter, our author treats of *Epileptic and Mania-*

cal cases, arising from Metastasis. "One of the most frequent and most striking examples of metastasis to the head," says our author, "is that which ensues on the healing of old ulcers, or the disappearance of eruptive disorders." Hoffmann relates many facts of this kind from Talpius, Hildanus, and other writers. (*Hoffmann de Morborum Transmutatione.*) Our author has frequently met with cases of disorders in the head, which could be unequivocally traced "to the healing of old ulcers, or the suppression of artificial drains." He mentions the case of an old woman, who had had a long standing ulcer of one of her legs healed up, and who was immediately afterwards troubled with vertigo, attended with great debility and loss of appetite. She refused having an artificial drain formed in her leg, and in a short time died. Dr. Parry relates the case of an old man who had lived freely, and who had been affected with chronic inflammation of one of his legs, attended with œdema. The application of tight bandages greatly relieved these affections. But in a few days he was, for the first time in his life, seized with violent epilepsy. (*Elements of Pathology and Therapeutics.*) The disappearance of chronic cutaneous eruptions has been often known to be followed by attacks of epilepsy. Dr. Ferriar mentions an instance of this kind. The patient "became subject to epileptic fits, in consequence of the disappearance of scabies after the use of some external application, and who was suddenly cured, after a variety of remedies had been tried, by reproduction of the itch."

The repulsion of an acute eruptive affection is, in general, followed by stupor and delirium. The disappearance of chronic eruptions gives rise to different degrees of mania.

Cases have often been seen, where the sudden disappearance of gouty or rheumatic inflammation of the joints, and of the serous membranes, have given rise to maniacal and convulsive diseases. Dr. Parry states that he has, in several instances, seen "fits of epilepsy wholly superseded by gout." (*Elements of Pathology*, p. 376.) Our author relates the following case, in which "inveterate epilepsy appeared to be suspended by inflammatory rheumatism." The fits of epilepsy recurred only when the rheumatic affection subsided.

"MARY JENKINS, an old inhabitant of St. Peter's Hospital. The first note I have of her case is dated Aug. 15, 1811. A woman of short stature, spare habit, about fifty years old, who has long been an epileptic. During the last four months she has experienced no

attack of her disease. She labours under rheumatic pains in her limbs, with a cough and diarrhœa, and still complains of vertigo. She took medicines some time ago, to which she attributes, without reason, as I imagine, the cessation of the epileptic paroxysms.

A small dose of rhubarb and calomel was ordered for her every night, with a view to the state of the bowels.

Aug 20. Diarrhœa somewhat relieved. She is troubled with severe pains in her head, attended with giddiness.

Shave the head: apply a blister to the occiput.

Pulv. Cath. gr. xxv.

Cold shower bath afterwards.

23: Her pains are extremely severe in the limbs.

Calomel—Pulv. Antim. ʒi gr. ij. o. n.

Pulv. Opii, gr. j. o. n.

The rheumatic disorder became mitigated, but the affection of the head increased, and she gradually sunk into a comatose state; under which she expired on the 4th of September.

The vessels of the pia mater and of the brain were found highly injected with blood, and the lateral ventricles distended with a large quantity of serous fluid." P. 222-223.

The metastasis of dropsical inflammation to the brain has also been known to give rise to convulsive and maniacal affections. Lieutaud, Mead, and others, mention instances of this kind. The removal of tumours is sometimes followed by metastatic disorders of the brain. Our author mentions two cases; in one epilepsy, in the other mania, was the consequence of such operations.

The principal indications for the treatment of maniacal and epileptic diseases arising from metastasis, are very analogous to those which we have already mentioned for the cure of uterine cases. These indications are not, however, always to be attained by similar means. Venesection is not so generally applicable in metastatic as in uterine cases. Where the disease depends on the suppression of an habitual hæmorrhage, particularly if the patient be vigorous and plethoric, blood may be drawn very freely. The same rule may be observed in cases supervening on the healing of old ulcers, attended with a considerable discharge. Our author thinks, that in cases of hydropic metastasis also, bleeding may be promptly and copiously practised. In cases of metastasis from a primary affection of the serous membranes, our author thinks that "topical bleeding, by cupping or leeches, is preferable to venesection in the arm." The same observation applies in cases of convulsive or maniacal affections supervening on the recession of the exanthemata.

"On the disappearance of measles, for example, large general bleeding would be improper. The circulation is in such cases weak and irregular. In the metastasis of erysipelas producing mania, I have seen it employed without relief. It is only when the general circulation is strong, and the skin generally hot, that it promises advantage." P. 239.

Purging is a useful remedy, and often answers the purpose of bleeding. The principal indication, however, is "to produce a new determination; or, if possible, to restore that which existed previously to the metastasis." The circulation should be determined to the skin by means of the hot-bath, particularly after the recession of exanthemata. Pediluvium, or fomentations, may be preferable in some cases. Frictions and warm clothing should be employed to keep up the heat of the surface. Blisters to the part previously affected, are often useful. "Irritating ointments and liniments, as one containing tartarized antimony, or liquor ammoniæ and oil, may be used in many cases." Setons and issues are also frequently of great service. Our author has found mercury an efficacious remedy in cases of this kind. It should be given so as to produce ptyalism.

"We have seen, in the last section, that a new febrile disease supervening has often the effect of removing, or suspending, the disease of the brain. It is probably on this principle that mercury is efficacious in relieving patients who labour under maniacal disorders; and it seems most likely to afford benefit in those cases of mania which arise from metastasis. In metastatic epilepsy it does not appear to be so decidedly useful." P. 241.

In the seventh chapter, our author treats of "Epileptic and Maniacal cases, depending on a disordered state of the intestinal canal."

"I believe the notion," says our author, "which most generally prevails respecting the supervention of nervous affections on disorders in the intestinal canal, is, that they arise by what is termed sympathy, and without any other disease of the brain than what is implied by the expression that the whole nervous system sympathizes, in some unknown way, with the irritated portion of the stomach or intestines. It is not commonly imagined that any inflammatory process is set up within the cranium, in consequence of the disordered state of the digestive organs; or that organic disease of any part of the nervous system is an intermediate step between the original malady in the abdomen, and the subsequent manifestation of its effects in the state of the animal functions.

I am persuaded, however, after a long continued attention to this

subject, that the general progress of disease, where morbid affections of the intestinal canal are followed by disorder of the nervous functions, involves an intermediate affection of the cerebral and nervous fabric itself. The proofs of this opinion I cannot bring into one connected statement: they will result from the accounts of particular cases, of dissections, and from other observations, which are to be comprised in this chapter. The disease which I suppose to be produced in the brain, and other parts of the nervous system, is a state of morbid plethora in the blood-vessels belonging to that fabric. I shall not pretend to determine whether this always constitutes a degree of inflammatory affection, or sometimes amounts only to simple congestion. I have indeed before observed, that I do not know in what consists the difference between these states." P. 242-243.

Of Enteric Mania.—This is one of the most common forms of maniacal diseases. The mental disorder of enteric mania has nothing peculiar in its character. It happens most frequently in persons of a sanguine temperament, and between the ages of twenty-five and forty years. It is often periodical; the attacks commonly commencing about the beginning of summer. The first attack often comes on soon after having been subjected to causes which occasion disorder of the digestive and intestinal functions. Our author has notes of a variety of cases of mania, "which occurred immediately after a long voyage; during which the patient has been fed on salt provisions, and has suffered his bowels to become constipated." Irregular diet, and the habitual use of ardent spirits, are among its most frequent causes. Great anxiety of mind is often found to precede the attacks of this disease.

"A trifling degree of incoherence, a hurry and confusion of thought; sometimes an absurd degree of energy, manifested in the pursuit of some trifling object, is the first symptom which betrays the actual condition of the patient. In an attempt to reason with him, or resist him, he commonly becomes violent: he has often very early a lurking suspicion of his deranged state: at least this would appear to be the case from the frequent and positive assurances he makes to the contrary, even at times when no suspicion has been hinted."* P. 247.

The symptoms of deranged function of the alimentary canal are

* I have sometimes observed a maniac, after saying something extremely absurd, (although I have taken care that nothing in my countenance or manner of conversing betrayed my impression of his insanity), as if suddenly struck himself with the apparent incongruity of what he had been saying, break off and protest that he was in his right senses.

generally prominent. The disease is invariably attended with obstinate constipation. The fæces, when discharged by the operation of a cathartic, are often of a dark-brown colour, not unlike coffee grounds, or similar to chopped straw; frequently they are of a dirty green colour, and extremely foetid. Sometimes the long continued torpor of the bowels gives way, and a diarrhœa commences. This commonly increases the evil. The abdomen is still more swelled than before, "flatulence being superadded to the load of solid contents." The discharges are watery; sharp and transient pains are felt in the abdomen; the fauces and soft palate are generally found red, and covered with patches of mucus; the tongue is often red, sometimes with white streaks; generally, however, it is covered with a brownish fur; the thirst is ardent, and the breath has a peculiar fetor; the appetite is depraved, sometimes almost totally extinguished; and in other cases exceedingly voracious; the skin is clammy and cold, especially of the extremities; the urine is scanty and high coloured; "it contains matters which should naturally pass off by the alvine evacuations;" the pulse is rapid and irritable; generally neither full nor strong; watchfulness; the patient is irritable and tremulous.

Enteric Epilepsy. Nothing is more fully established in pathology than the occurrence of epilepsy from intestinal irritation. This variety of epilepsy is at first entirely sympathetic; it becomes permanent when the exciting cause cannot be removed, or "when the disease induced in the brain, or in the other parts of the nervous fabric, though at first the result of gastric or intestinal irritation, has taken a firm hold in the system, through the influence of habit, or by the effect of disorganization, occasioned by long continued morbid action." Often, however, if we remove the irritating cause from the bowels, the disease disappears. Worms in the alimentary canal frequently produce epileptic fits. Our author thinks it doubtful whether the fits are produced by the irritation of the worms, or by the noxious influence of the vitiated secretions and accumulated sordes in the bowels, which always co-exist with worms. We often see severe fits occasioned by such vitiated matters where there are no worms. The irritation arising from the presence of the tape-worm is, however, frequently in itself a sole cause of epilepsy. The convulsive attacks of young children very frequently depend on an irritation of the primæ viæ.

"During the period of dentition, when the constitution is gene-

rally disturbed, the bowels often fall into an irregular state; and this circumstance is sometimes the precursor of convulsive paroxysms. In such cases there are often other indications of disorder in the brain besides the fits of convulsion, such as drowsiness; sometimes a degree of stupor, almost amounting to coma; grinding of the teeth during sleep, and frequent startings; a hot and dry skin, with a full, strong, and rapid pulse. The abdomen is, at the same time, tumid and hard, and distended with flatus. It is discovered, on inquiry, that the bowels have been for some time constipated or in an irregular state, or that the stomach has been recently loaded with indigestible food. On examining the alvine evacuations, it is generally found that the aliment passes off in an undigested state. In many instances there is a deficiency of bile, but this is not a constant or essential feature in the disease: the whole quantity of matter discharged is often greater than is natural to the age of the child. The breath is offensive; the tongue white; and the child picks his nose. In short, there are nearly all the phenomena which are supposed to denote the presence of worms in the intestinal canal; though it often appears, on examination, that none exist." P. 254-255.

The principal indication which refers to the treatment of this variety of epilepsy, is obviously to remove the irritating causes from the alimentary canal. Besides this principal indication, the fulfilment of which is indispensable to the ultimate and permanent relief of the patient, "a more immediate one often occurs, which is to relieve the secondary, but more urgent affection of the brain." If the habit be full, sixteen or twenty ounces of blood should be taken. To aid this, we will often derive much benefit from cups applied to the nape of the neck.

Shaving the head and applying to it cloths dipped in cold water, is always of much service, when the temporal arteries beat violently, and the conjunctiva appears injected, with intolerance of light, tinnitus aurium, &c. Under these circumstances, a blister applied to the nape of the neck, and leeches to the head, are effectual means of relieving the cerebral congestion. In cases of epileptic delirium, similar means are still more decidedly called for. Whatever be the means resorted to, in order to lessen the congested state of the vessels of the head, the bowels must always be especially attended to. Emetics and cathartics should be promptly employed, in all cases where there is reason to suspect a loaded state of the stomach and bowels; and particularly where symptoms of depraved digestion be present. The warm bath frequently facilitates the operation of purgatives, and contributes to relieve

the system in other respects. After the acute symptoms of cerebral affection have been reduced, by the means just mentioned, we must resort to "the more continued treatment in this disease, considered as a chronic affection.

"In protracted cases of enteric disease we often find little to be done by cathartic medicines. A long continued diarrhœa has, in many instances, exhausted the strength of the patient, and evacuated the intestinal canal of its more solid contents. At the same time a morbid secretion keeps up the irritation in the system, which the previous circumstances had excited: a depraved appetite, a feeling of emptiness, or sinking, as it is vulgarly termed, with a perpetual craving, induce the patient to fill his stomach, from time to time, with unwholesome substances. Flatulence, acid eructations, a sallow countenance, a foul tongue, reddened fauces, are indications of this second and often very obstinate stage of the disease." P. 261.

Under these circumstances, it is still, however, necessary to evacuate the vitiated contents of the bowels. After the employment of a few doses of calomel and rhubarb, the action of the bowels should be kept up by stimulating laxatives; for this purpose the following formulæ will answer very well. R. Pil. hydrarg. gum. assafoetid. ext. coloc. comp. āā gr. v. Bis vel ter indies sumend. This may be advantageously alternated with the following. R. Infus. sennæ, infus. calumbæ, aquæ piment. āā ℥v. sodæ carbonat. ℥. M. Ft. Haustus. ter indies sumendus. The oil of turpentine, says our author, is an exceedingly useful remedy in cases of this kind.

"Of all the remedies I have ever tried in that state of the intestinal canal I am now considering, I have found none so frequently useful as the oil of turpentine.* The efficacy of this medicine is exemplified in some of the cases in the following section, particularly No. I. II. III. and v. The precise manner in which the oil of turpentine acts, I am unable to explain; but the fact is, accord-

* I was first induced to make a trial of this remedy in consequence of reading an account of its efficacy by the late Dr. E. Percival, then of Dublin. This account was delivered with so much accuracy and candour, that it made a strong impression upon me, and I immediately began to adopt the practice recommended by the author. The trials I made were followed by results which exceeded my expectations. I have since that time prescribed the same medicine in a great number of cases, and have ascertained that it is most serviceable when given in pretty large doses, as to that of half a drachm to a drachm, or even two drachms, three times in a day. Even the latter quantity can be very well borne by the stomach in many instances, when given in the form of an emulsion carefully prepared; of which half an ounce, containing half a drachm of the oil, may be taken in a cup of milk. The emulsion should be prepared by diffusing the oil, by means of honey, or mucilage, in some strong aromatic water, such as Aqua Carui or Cinnamomi.

ing to my experience, (and I have prescribed it in a great number, probably in many hundreds of cases, and attentively observed its effects,) that it very soon changes materially the state of the intestinal canal. It occasions moderate and regular evacuations, corrects the tendency to a frequent repetition of griping and irritating stools, and relieves or completely removes flatulence. At the same time the oil of turpentine exerts a peculiar sedative or tranquillizing power on the nervous system. It lessens irritability, the disposition to starting and convulsive twitching of the muscular fibres, and promotes sleep" P. 262-263.

The author's experience does not lead him to place any considerable reliance on the nitrate of silver in epilepsy, although it appeared to mitigate the disease in some instances.

The author thinks that nervine or antispasmodic medicines are of considerable service in enteric epilepsy. These are at present too much neglected in cases of this kind. Cases of enteric epilepsy sometimes occur, which are attended with an almost invincible torpor of the bowels. The principal recourse, in cases of this kind, is mild enemata.

"A large quantity of water should be injected into the rectum every day, or twice in the day, viz. every morning and evening. Many persons prefer warm water, and obtain from the use of it a sufficient relief. In other instances cold water has been found more effectual. I attended a man about two years ago, who had a variety of troublesome disorders, the effect of habitual costiveness. This person now enjoys good health, and a greater degree of vigour than he has experienced for many years. His remedy is an enema of water, which he injects always as cold as he can procure it, every morning, by means of a leather bag. He first injects two quarts, which speedily excite his bowels to evacuate their contents, and he then immediately repeats the operation." P. 267.

In the eighth chapter, our author treats of "epileptic and maniacal cases, connected with disease in the liver, and other abdominal viscera." He states that, he has seen several cases of epilepsy, in which "symptoms of active inflammation, or of chronic disease of the larger abdominal viscera, and particularly of the liver, were discernible." In these instances, he found that those remedies which were calculated to relieve the disorder of the abdominal viscera, if they were successful, removed, at the same time, the epileptic affection. He therefore infers that there is some connection between "that morbid state of the brain which

gives rise to epilepsy, and a diseased state of the liver and other large viscera of the abdomen."

Having treated of those cases of maniacal and epileptic diseases which depend on primary disorder in some of the abdominal organs, our author passes on to the consideration of similar affections arising from the immediate action of injurious causes on the nervous system itself. These causes are of two kinds. 1. Mechanical injuries of the brain; 2. Narcotics and other physical agents having the property of greatly affecting the nervous system; 3. Violent emotions, passions, &c. The author therefore divides this part of his subject into three parts. In the first, he treats of cerebral diseases arising from mechanical injury; in the second of those cases which depend on physical causes; and in the third, "of examples of similar derangement from the operation of mental emotions."

Medical authors furnish us with many examples of convulsive and maniacal affections arising from mechanical injuries of the brain. The following case fell under the author's observation, in St. Thomas' Hospital, in 1804.

"Trusty Halsted, a negro sailor, aged twenty years.

He is a slave; and about four years ago, his owner, or some other white man, in a fit of anger, struck a blow on his head with a hammer. The extent of the mischief occasioned by the blow was not ascertained, but he soon after became subject to epileptic fits, and partially hemiplegiac on his left side.

He was admitted into the Hospital as a patient of Dr. Wells, who ordered him to have a blister, and perpetual drain at the nape of the neck, and to take cathartic mixture.

The head being examined, it appeared probable that some injury of the skull had been the consequence of the blow received; and accordingly the operation of trepanning was performed. A piece of the cranium being removed, a fragment of the interior table was found to have been forced inwards upon the brain, and penetrating to the depth of the eighth part of an inch.

An epileptic fit took place while he was under the operation, and the same disorder assailed him occasionally, as long as he remained in the hospital, though it appeared somewhat mitigated. He was taken away by his owner, and obliged to go to sea before the wound was healed. It is probable that some considerable disorganization had been induced in the encephalon, by the long continued compression, and, perhaps by the irritation occasioned by a sharp fragment of bone forced in upon the dura mater.

In the foregoing case the symptoms may be ascribed to compression of the brain." P. 347-348.

Those cases of epileptic and maniacal diseases which depend on the direct action of physical causes on the brain and nervous system, "may be distributed under three heads in relation to the noxious causes that give rise to them.

1. "Disease in the brain, whether consisting in chronic inflammation and its effects, in tumours, or other spontaneous changes of structure, often exists in connexion with a scrophulous habit, and gives rise to various forms of disorder in the nervous functions,

2. In the second place I may mention morbid changes of structure, which are not manifestly connected with a scrophulous constitution.

3. Various noxious matters taken sometimes with the aliment; at others as poisons, occasionally as medicines, which stimulate the nervous system, and induce diseased action. One of these is mercury; a substance which so irritates the nervous system, in some constitutions, as to induce severe and dangerous disease. Maniacal affections have often been excited by it." P. 353-354.

The intemperate use of ardent spirits is a very frequent exciting cause of mania and epilepsy. In persons naturally predisposed to these diseases, they are sometimes brought on simply by a more stimulating diet than the constitution of the individual can bear. External heat, also, often excites this disease; alternations of heat and cold are particularly apt to bring on those diseases in persons predisposed to them.

Our author again adverts to the utility of issues and drains in cases of this kind.

"Numberless cases," says he, "are recorded by medical writers of the benefit accruing from the use of issues and setons in diseases of the brain, as well as of other internal parts. I shall call to the remembrance of my readers one or two cases of this description, which appear to afford a very decisive testimony.

Dr. Bateman has related two instances of the benefit produced by setons. One was that of a boy, aged thirteen years, who was affected by chorea, after a blow on the head, received in a fall: he was subject to irregular movements of the limbs, chiefly on the right side, and to a considerable degree. 'For three weeks,' says Dr. B. "the boy has been unable to leave his bed; has been peevish and irritable; often screeching, and distorting his features, as if from sudden pain. Bleeding from the temporal artery, blisters, and purgatives, afforded no material relief; but he recovered after the application of a seton in the neck. A gradual improvement took place from that time."

Dr. B. says he has often witnessed the superior utility of setons to all other depletions, in chronic diseases of the head.

'A few years ago a girl, not arrived at the age of puberty, was reduced to a state bordering upon idiotism, by frequent attacks of epilepsy: there was, in fact, little other prospect than of confirmed idiotism for life, if she survived the severe paroxysms of convulsion. The measures just enumerated, and particularly repeated bleedings by leeches, open blisters, and mercurial laxatives, were carefully employed, but without affording any essential relief. But from the moment when a discharge from a seton commenced, she began to recover her intellects: the drivelling expression of fatuity gradually left her countenance, and the epilepsy ceased. She remained afterwards free from epilepsy, and in possession of a respectable share of mental acuteness.'

A case, equally striking and decisive, as to the efficacy of this remedy, is related by Dr. Mead. 'A girl of five years old, of plethoric habit, was seized with violent and frequent convulsions, from which she was with difficulty saved by evacuants, and other remedies. After a short interval she was again,' as Mead says, 'at the full moon, seized with a violent fit: after which the disease kept its periods constant and regular with the tides. *She always lay speechless during the whole time of flood, and recovered upon the ebb!!* The father, who lived by the Thames' side, and did business upon the river, observed these returns to be so punctual, that, not only upon coming home, he knew how the child was before he saw it, but in the night has risen to his employ, being warned by her cries, when coming out of the fit, of the turning of the water!! This continued fourteen days; and then a dry scab on the crown of the head (the effect of an epispastic plaster, with which I had covered the whole occiput in the beginning of the illness,) broke, and from the sore a considerable quantity of limpid serum ran. Upon which, the fits returning no more, I took great care to promote this new evacuation; and, besides purges of mercurius dulcis, &c. directed an issue to the neck; which being thought troublesome, was made in the arm. The patient, however, grew up to woman's estate, without ever feeling any attacks of those frightful symptoms.'" P. 366-7.

The tenth chapter embraces an account of local convulsions or partial epilepsy. We extract the following characteristic cases.

"Samuel Brain, Aug. 27, 1821.—A man of dark complexion, aged thirty-two years, who gains his livelihood by working in a glass-house. Two years ago he was suddenly seized with a jerking, or tossing of the right arm; which continued about an hour, and then subsided. About a fortnight afterwards, a total paralysis seized the same arm, and continued about half an hour; during which time he was completely blind in the right eye. These symptoms, like those of the former attack, were but temporary. But, ever since that period, he has been subject to occasional attacks of vertigo, attended with tremour and faintness, almost

amounting to syncope, according to his own account, so that he nearly loses his senses. He was lately seized with these feelings, and remained during four days, scarcely conscious of existence. If he attempts to walk or move quickly, the sense of faintness and giddiness is almost insupportable. Pulse 45, and weak. Tongue white. Throat looks reddened."

"Hugh Bray, admitted Dec. 23, 1816.—A stout labouring man, aged forty-six years, who has been of late much troubled by a strong convulsive jerking of his left arm. It comes on by fits: his arm is violently tossed about for a minute or two: it afterwards feels benumbed, and he is, for a short time, incapable of moving it. After each of these attacks he suffers vertigo, and a severe headach, but never lost his senses. The disorder recurs several times in a day. In the interval he feels himself tolerably well.

Treatment.—Pulv. Cathart. gr. xxv. altern. noct.

Mist. Cathart. ℥iss. ter indies.

28. He says he is much better: he has had no attack of the convulsion for several days, but still complains of the feeling of deadness, or numbness, which used to follow the fit.

Repeat the same medicines.

Jan. 4th, 1817. The complaint in his arm is quite gone; he has a catarrh and cough.

Pil. Cathart. 3. omni nocte.

Mist. Salin. Antim. c. T Scillæ.

Oxymel. Scill.—Syrup. Opii. part. æq. q. r. n.

15. Cough continues; chest oppressed.

Ven. Sec. fl. ℥xvj.

Empl. Lytt. ad Stern.

Repet. cætera med.

Feb. 1. Discharged cured. He has had no recurrence of the disease in his arm.

From the immediate effect of cathartics in removing the disorder, it may be presumed that the irritation, which was the exciting cause of the disease, had its seat in the intestinal canal." P. 387-8.

The concluding chapter embraces an account of the phenomena and nature of somnambulism. The author considers sleep-walking as a morbid modification of ordinary dreaming. He relates several curious examples of this kind. Our analysis has, however, already been extended to so great a length, that we cannot pursue it any further.

Mr. Prichard's work is undoubtedly a very useful one; it contains many sound pathological views, and important practical directions. His distribution of convulsive and maniacal affections, according to the disordered natural functions with which they are connected, is, we think, highly judicious.

ANALECTA.

Re-union of the Osseous Disc, separated by the Operation of Trepan.

DR WALTHER, Professor of Medicine and Surgery at Bonn, relates the following experiments, showing the re-union of the osseous disc, after it has been separated by the operation of trepan.

The left parietal of a dog, with a very small portion of the frontal bone, was laid bare by a crucial incision. A small trephine was applied to the parietal bone, close to the sagittal suture. The teeth of the instrument, after perforating the bone, had torn the dura mater, where it forms the ensiform sinus, and had opened the latter. Having removed the disc, the blood escaped with rapidity; but the hemorrhage was quickly stopped by means of lint. During this interval the bone separated from the cranium, and all the soft parts remained upon the table. The periosteum was also removed from it. Perceiving no hemorrhage to follow the removal of the charpie which had been applied to the wound of the sinus, the osseous disc was replaced in the situation from which it had been taken. It did not entirely fill the hole in the parietal bone. The flaps formed by the scalp were placed over it, and their margins kept in contact by means of a suture.

The animal suffered little during the operation. On the second day he had slight fever, but on the third day regained his appetite. The dog lived twelve months afterwards. After his death, the portion of bone formerly removed was found to be united to the margin of the opening, so as to render it difficult to discover its limits: so closely did the callus resemble the rest of the osseous substance, that they could not be distinguished.

The following case, which occurred in the human subject, is still more important.

A man was wounded on the head by a stone. The symptoms of concussion were moderate. He was bled on the second day after the accident; and on the sixth he felt himself so far recovered as to pursue his occupation. Pain of the head soon became so violent as to render him incapable of work. He was bled from the arms and feet, had cold lotions and ice to the head, vesicatories and setons to the nape of the neck, with purgatives and emetics, without relief. At length the pains in the head became intense: no other symptom, indicating lesion of the brain, was present. This determined individual begged with impatience for the operation, and refused every other treatment. The operation of trepan was resolved upon, in the situation where the pain was most severe. After making a crucial incision, the trephine was applied, and the osseous disc removed. The dura mater, and the internal surface of the vitreous table, were sound; nor did exudation exist between the two lamellæ of the bone. The periosteum, which was in part detached from the disc, was now entirely removed. The portion of bone was replaced into the opening, and the scalp over it retained in contact by means of adhesive plaster.

The febrile symptoms were moderate; the inflammation of the dura mater was by no means severe, and entirely local; but re-union of the flaps did not take place. Suppuration supervened. The discharge continued during some months; yet the patient found himself better, and the pain of the head gradually diminished, and ultimately disappeared. At the bottom of the wound, the osseous disc could be felt with the probe, free and moveable. The operator conceived, at the end of the third month, that it ought to be removed;

but, after having seized it with the forceps, instead of bringing away the piece of bone in its entire thickness, a very thin, angular, and ragged portion, consisting only of part of the external table, was removed. The inferior surface of this portion was rough and unequal; one of its margins was round, the other pointed and serrated. In a word, the vitreous table of the separated disc and a part of the external lamella were re-united; while the larger portion of the latter was exfoliated. On attentive examination of the bottom of the wound by the probe, the parietal opening was found thoroughly closed, and filled by osseous matter, hard and covered by healthy granulations.

As exfoliation and granulation cannot take place unless from a part which possesses an active state of its vessels, so it becomes evident that the re-united portion of bone retained its vitality in this case, formed vascular connections with the dura mater and with the diploë, and became subject to the usual processes of nutrition and vascular action.

After the removal of the exfoliation, the suppuration gradually diminished, and in a short time the wound cicatrized in the usual manner.—*Nouveau Journal de Médecine.*

Bedford Springs.

In addition to the account of these valuable Springs in the Recorder, p. 381, we are pleased to be enabled to give the following statement, which may be highly useful to our subscribers and their patients.

These springs are situated on the great Western Turnpike, which passes through Pennsylvania from Philadelphia to Pittsburg. They are a short distance from Bedford, a neat and active village, having a beautiful situation in the mountainous region, east of the chief elevation of the Alleghany. The country around is calcareous and silicious, abounding in various minerals, interspersed with hills, and valleys, blessed with delightful streams of the purest water, and a fertile soil. In this region the air is very pure; bilious and intermitting fevers being quite unknown. In summer it is generally cool and animating, the nights never uncomfortably warm.

The great Western Turnpike, passing through Bedford, and now completely finished, furnishes an easy access to those Springs, which comprising their active properties, the cheering temperature of a pure atmosphere, and the elevation of the country, may be considered a healthful and pleasant summer retreat, from the heats and diseases of the cities and warmer regions.

The public houses in the village, and those at the Springs, are large and airy, and well fitted up for the accommodation and comfort of visitors:—The cold, shower, and warm baths are constructed in the most convenient manner, and can accommodate at least 500 persons—the walks and other public improvements are greatly extended for the last year or two, and are annually beautified and increased by the appropriation of *all the yearly taxes and contributions* received from visitors using the waters.

The water itself contains salutary and medicinal qualities of the highest order. It has been found so beneficial, in the cure of diseases, that it is carried away, almost daily, at a great expense, to the cities and neighbouring states.

It furnishes by an analysis, made by one of the first Chemists of the nation, the following results:—

1. Carbonate of Lime, with excess of acid.
2. Sulphate of Magnesia, or Epsom Salts.
3. Sulphate of Lime, small quantity.
4. Muriate of Magnesia.
5. Carbonated Oxyd of Iron.

To which may be added *Sulphurated Hydrogen*, as a property of one of the springs; this gas having escaped in the transportation of the water to the place in which it was analysed.

From the chemical results given, it is plain that those waters must be laxative and tonic, and experience has amply proved, that they possess these effects in a high degree. They will excite full purging, and when the first passages are charged with bilious or other acrid materials, the water will remove them, with as much activity as the most powerful purgatives. The water also excites the kidneys and skin, causing a very liberal secretion of urine and perspiration.

The intimate connexion subsisting between the stomach and bowels, and the other portions of the animal body, gives to laxatives and purgatives a very extensive influence, in the practice of the medical profession. The alimentary canal being considered the centre of sympathy, all impressions made there, readily communicate themselves to the most distant parts of the system, and effects are, in consequence, produced, much more important than the simple act of purging.

In chronic diseases, those only in which mineral waters have salutary powers, the morbid sympathies are often so complicated as to baffle the best efforts of the physician. A long course of purgatives is disgusting, the patient becomes inattentive, and his tastes and feelings conspire to render the wisest plans ineffectual. Mineral waters, change of air, and exercise, are therefore applied with the most salutary results.

The sulphates and muriates of magnesia, with which the Bedford water is highly charged, are decidedly purgative, while the carbonates of lime and iron are decidedly tonic. This combination of purgative and tonic powers, forming the basis of this mineral water, happily imparts no unpleasant taste to the palates of most persons, and all, after a short experience, find the impression agreeable.

The Bedford waters, drank with proper precaution, respecting quantity, temperature, diet and exercise, accompanied with the judicious use of the baths, are found to be salutary in most states of chronic disease. In hepatic affections, in diseases of the stomach and intestines, in dyspeptic and hypochondriacal derangements, in hæmorrhoids, and in all the varieties of intestinal worms, the water has effected numberless cures. In secondary diseases of the lungs, originating in the sympathies of those organs with the stomach and liver, the cures have been equally certain. This class of disease is marked by the general symptoms of pulmonary consumption, asthma, &c. but when those diseases have their primary seat in the lungs, these waters have been found to be useless, excepting in the forming state of primary consumption, in which they have done well. In the diseases of the skin and of the kidneys, and especially in calculous and gravelly affections, they have been very efficacious. In rheumatism of weak excitement, in anasarca and the various uterine diseases, as obstructions of the menstrual flux, its excess, the fluor albus, painful menstruation, &c. many cures have been effected, whilst its use has been generally beneficial. In diabetic and gouty complaints, it has been used with great benefit. In debility following the cure of acute diseases, or the remedies necessary to remove them, and in the weakness consequent on the cure of syphilis by mercury or otherwise, the Bedford waters have been found to be good restoratives.

The experience and observation of twelve seasons have established the above facts, on which the public may rely with confidence.

Published by order of the Board of Managers.

J. M. ESPY, *Secretary.*

Bedford, Pa. August 24th, 1821.

P. S. The Turnpike Roads from Philadelphia, Baltimore and Pittsburg to Bedford, being completely finished; the distances from these cities to the Springs, and from Washington City and Cumberland, are now added for the information of strangers, viz.

From Philadelphia,	- - - - -	195 miles.
From Baltimore,	- - - - -	130
From Washington city,	- - - - -	130
From Pittsburg,	- - - - -	93½
From Cumberland, on the national Turnpike, by a safe and good road to Bedford,	- - - - -	30

Extract of a letter from John R. Lucas, M. D. of Brunswick county, Virginia, to Dr. Eberle.

"The discrimination between Syphilis and Pseudo-Syphilis, until within a few years past, has not been sufficiently attended to by practitioners. The consequence was, that many fell victims to a supposed disease, from improper treatment, when in fact they were altogether free from the disease of which they were believed to have died.

I recollect very well, while a student of medicine at Edinburgh, in years 1803, 4 and 5, to have seen several of my fellow students labouring under pseudo-syphilis, who were pronounced by professors Thomson, Monro the elder, as well as Benjamin Bell and Dr Barclay, to be affected with genuine syphilis, and treated as such; one of the young gentlemen was particularly troubled with small ulcers and pustular eruptions about the glans penis and anus, which continued, in despite of their exertions, to plague him for 18 months to two years. He ultimately recovered by doing nothing. I now know these cases to have been pseudo-syphilis. I do not wish to be understood as casting any censure on the above named gentlemen, but merely mention the facts to prove how little was known of the disease at the time referred to, by persons whose experience and extensive practice afforded the amplest opportunities of obtaining correct information.

I think it unnecessary to enter into any detail of the symptoms of this disease, or the diagnostics between it and genuine syphilis. Those who are not already acquainted with them would do well to consult Dr. Carmichael's treatise on venereal diseases.

Within a few years back I have met with several cases of pseudo-syphilis; I treated them at first as genuine syphilitic cases, by mercurials, &c. During the continuance of the mercurial action on the system, and for a short time after, the symptoms of the disease disappeared, but would shortly reappear; many cases occurred about the same time in the circle of my friend Dr. J. L. Miller, who treated them on the same principle with myself, viz. by mercurials. We found ourselves considerably perplexed in removing the disease from our patients, for after discharging them as we supposed well, they would return in a few weeks as bad as at first. About this time Carmichael's book fell into our hands, and disclosed to us the character of the disease: our patients were then treated on the principles there laid down, viz. antimonials, decoction of sarsaparilla, &c. but to no effect: we became seriously concerned for the fate of several patients. Hearing that there was a man who cured the disease by a secret remedy, a patient was directed to apply to him for it, and to show it before using it; he did so, and Dr. Miller found the remedy to consist of one dram of sub. muriat hydrarg. suspended in one ounce of the spirits terebinth. This was directed to be well shaken, and 20 to 30 drops taken three times daily on sugar, until a gentle ptyalism came on, which was to be kept up until the symptoms of the disease had disappeared; for a few days the injunctions were attended to; the disease quickly disappeared, and has never since returned. Many patients have since been treated in a similar way, with the same uniform result, except in one instance. In this a second course was had recourse to, since when there has been no return of the complaint. From these trials of the

remedy I am induced to believe that it will be found a specific in all pseudo-syphilitic cases, and therefore recommend it with much confidence to the notice of the faculty.

While on the subject of venereal complaints, perhaps it will not be unacceptable to the readers of the Am. Med. Recorder to say that the following injection will be found the most certain and speedy cure for gonorrhœa of any heretofore used, viz.

R. Acid. Sulph. gutt. v.
Aq. font. $\frac{3}{4}$ viii. misce.

to be used every hour or two; this will be found about the medium strength. The object is very gently and slightly to acidulate the water, and make the injection of such strength as just to be felt in using it.

If the patient is of a full habit, bleed and give a few doses of sulph. sodæ, low regimen, &c. The introduction of this injection (as far as I know) into practice, is due to Dr. J. L. Miller, of this county, a gentleman who always appears to manage that case best which is most critical. This injection is recommended with the highest confidence in its utility and success."

Tic Douloureux.—In the last page of the Medical Recorder, is a notice of a case of this most excruciating disease cured by the use of *carbonate of iron*, prescribed by Mr. Richmond, in consequence of reading Mr. Hutchinson's pamphlet on that disease. It has appeared to me that a short abstract of Mr. H.'s work would be useful, and therefore send it.

"The most frequent seat of this affection is in the nerves over the os malæ, the alæ nasi, teeth and gums; sometimes the lower jaw and the tongue, the mastoid process, the ear, and the angle of the lower jaw, are the seats of the disease. Mr. Cooper mentions a case in which the radial nerve was affected, and Lentin one where the pain was in the calf of the right leg; Mr. Abernethy published a case of this disease situate in the ring-finger of the left hand. Mr. Fox, (Nat. Hist. and Dis. of Teeth) gives a narrative of a case, in which the suborbital branch of the fifth pair of nerves was affected, that was cured by the division of the nerve; this operation has however repeatedly failed.

Dr. Corkindale of Glasgow (Edinb. Med. Jour. vol 4.) describes another cured by calomel and opium, until salivation came on.

Mr. Hill of Chester (Eng.) cured one by Fowler's solution of arsenic: seven drops three times a day were taken in a cup of gruel.

Mr. Hutchinson uses the *ferri carbonas* of the London Pharmacopœia, and relates six cases of the disease in which it was successfully used, and adds that his case book furnishes many similar examples of the curative powers of the medicine. The pain suffered by the patient was of the most excruciating nature; one lady had been affected for twenty years; the common dose was one drachm twice a day in honey, but in one instance he gave four scruples twice a day, after having found that the first named quantity had no effect after a trial of three weeks. On the fifth day a perceptible change for the better was evident; and in one month more the complaint vanished. Thus far Mr. Hutchinson.

The mode of preparing the sub-carbonate of iron, is an affair of importance, and it is probable that to carelessness in that respect, many failures of it may be ascribed.

The prescription of the London College is as follows.

"Take of sulphate of iron eight ounces,
Sub-carbonate of soda six ounces,
Boiling water one gallon:

Dissolve the sulphate of iron and carbonate of soda each in four pints of water; then mix them together and set aside, that the powder may subside: pour off

the supernatant liquor, wash the sub-carbonate of iron with hot water, wrap in filtering paper, and dry in a gentle heat."

This preparation Dr. Thomson, in his excellent pharmacopœia remarks, is a sub-carbonate of soda. By mixing the solutions together, a double decomposition is effected. The sulphuric acid of the sulphate of iron combines with the soda, while the iron attracts the disengaged carbonic acid of the sub-carbonate of soda, and hence the products are an insoluble sub-carbonate of iron and a soluble sulphate of soda, which are easily separated by washing and filtration. When first precipitated, the sub-carbonate of iron has a deep green colour, and is at a minimum of oxidisement, but while drying it attracts oxygen readily from the atmosphere, and is converted into the red oxide or a peroxide, containing, according to Proust, 48 per cent. of oxygen. *We have found that the precipitate combines with the largest proportion of carbonic acid, when the solutions are mixed at a temperature of 150° of Fahrenheit; and filtration is necessary for separating it, the decantation of the clear fluid being very difficult, owing to the lightness of the precipitate.* The great solubility of the sulphate of soda renders much subsequent washing unnecessary, and the precipitate, after being washed, should be dried in the paper on which it is filtered, by a heat not exceeding 200°.

Philips (in his Exp. exam. of the Lond. Pharm.) says that the greatest proportion of carbonic acid that existed in carbonate of iron, amounted to 14.5 per cent, although dried by the heat of steam within twelve hours of the time of its preparation; the medicine is therefore a sub-carbonate of iron. He adds that his experiments prove to him that eight parts of the sulphate of iron, require eighty-two parts of the sub-carbonate of soda to be decomposed, instead of the ten parts formerly ordered by the London college, and the six parts at present.

Farr on Scrophula, London, 1820.

SCROPHULA.—In the year 1811 Mr. Brandish, a Surgeon of London, published a treatise recommending the use of the Caustic Alkali in this disease, in which, ample experience had convinced him of its utility: and Mr. Farr, also, of London, in 1820 confirms the benefit derived from it. The mode of practice, and the formula of the latter differ somewhat from the former. He prescribes the caustic alkali twice a day, between breakfast and dinner, and at night on going to bed, in any vehicle that the patient may think most palatable, provided it does not interfere with its chemical properties. To children from four to six years old, he gives one drachm by measure: from six to eight years, one drachm and a half: from eight to fifteen, two drachms: from fifteen to eighteen two drachms and a half: and in some few instances even more. It acts as a diffusive stimulus to the whole frame, increasing slightly the action of the heart and arteries, yet not after the manner of alcohol, disproportionately to the powers of the system, but so uniform and correspondent to the action of the whole body, that no subsequent depression or languor is ever experienced. He remarks, that "alkalies, in some shape or other, have been for a long time, the universal nostrums, in all diseases of a scrophulous character: for instance, the muriate of lime, whose basis is an alkaline earth; calcined sponge, the active material of which is the soda contained in it; the volatile alkali and others; but none have stood the test of experience in the same degree with that of the caustic alkali. Mercurial friction is also to be used, and animal food, warm clothing and exercise are to be conjoined.

For children, from 4 to 8 years old, he directs five grains of the strong mercurial ointment of the London Pharmacopœia; from 8 to 12, eight grains: from 12 to 15, twelve grains, and from 16 and upwards from 12 to 15 grains, which is to be rubbed in every night before going to bed; the friction to be continued, until no portion of ointment can be observed to stain a clean finger

when applied to the part on which such friction has been employed. The ointment may be applied to the arm or leg. The hand used in rubbing in the ointment, and the limb to which it is applied, are to be covered, with a glove or stocking. Every third or fourth day the anointed limb is to be washed; and water rather warm is to be employed in the daily ablution of the hands and face. An opening draught of neutral salts, or rhubarb, is administered.

This treatment is sometimes discontinued for a time, in order to try the effects of chalybeates, in cases more particularly where the joints are concerned, as well as other remedies which have been recommended as useful in the disease; but these are adopted only in the protracted forms of scrofula, to render the alkaline medicine and mercurial friction less familiar to the constitution, by a temporary discontinuance of their use.

Local treatment.—To incipient enlargements of the glands leeches are applied twice a week, after which, a solution of the muriate of ammonia in vinegar and water, varying the strength of it in proportion to the irritability of the part. To stationary enlargements of the glands, blisters are applied, and a discharge kept up by dressing with savine ointment, or what sometimes succeeds better, the *ung. hydrargyri mitius*. If the inflammation proceed to the formation of abscess, a poultice of bread and milk is applied; an opening should be made with a common lancet, before absorption from pressure of the contained matter shall have rendered the sides of the cyst so thin, that ulceration of more or less extent, must be the inevitable consequence, from the weak living principle such parts possess. The abscess being relieved of its contents, compresses of lint should be applied, so as to obliterate its cavity, and a cotton bandage applied; lime-water injected into the cyst, after its evacuation, sometimes greatly facilitates the cure, by slightly inflaming its sides; but judgment is requisite in determining its use, from the extreme disposition of the surface to ulcerate.

Scrofulous sinuses ought not to be dilated, as they do not granulate like those succeeding common phlegmonic inflammations; but leave an obstinate ulcer. A seton drawn through the sinus obliterates the cavity, by an effusion of coagulable [coagulated] lymph throughout, by the excited exhalants.

Scrofulous inflammation of joints is to be treated by blood-letting (we presume local) and cold applications. Blisters are to be applied a few inches from the seat of the affection, to enable the surgeon to direct his other remedies immediately to the seat of the disease, while he keeps down inflammation, by discharge from the skin. When the inflammation has been subdued, and a thickening of the parts remains, strips of Baynton's plasters, or of the Empl. saponis, or the Empl. hydrarg. c. ammoniac are useful. Rest in a horizontal position, when the seat of the affection is in the lower extremities, is to be strictly enjoined.

The Magnet.

The application of the magnet having been recently found very beneficial in alleviating the painful attacks of tic douloureux, in Philadelphia and its vicinity, we give an abstract from Alibert on the use of that remedy in various diseases.

On the Magnet as a Remedy in Disease.—M. Alibert, upon the authority of Mr. Thouret, a distinguished French physician, relates that the magnet was of the greatest benefit to a merchant of Rouen, aged 65, affected with the tic douloureux. The application of it caused immediate relief, acting like a charm: leaving only a slight dull sensation or numbness, quite bearable. Nevertheless he experienced occasionally very painful crises, but although the magnet eased the pain, it did not cure it.

The case of madame Bronod is also given, who was affected in the right upper jaw with such intense pain, that she screamed violently, without ever obtaining the least relief from numerous remedies: among which was the actual cautery.

Her pain increasing for six years, she put herself under the care of M. l'Abbe Lenoble, who gave her a magnetized crown or collar; and a cross to hang at her breast, and two plates for her legs: from that day the symptoms diminished, and by continuing to wear them, the cure was completed. MM. Thouret and Andry report the case of a woman cured of a most painful toothach, by the application of the remedy in question. Another case is recorded in which the sufferer lost all his teeth without relief, and whose recovery was effected by the magnet. The pain disappeared gradually on its application. A servant was affected for three days with a fever from violent toothach, and had no sleep; at the moment of his greatest pain, the magnet was applied: the following night he slept well. eighteen months afterwards, he had not the slightest symptom of pain. Professor Sparman informed me that he used the magnet with great success in the *tic douloureux*. The subject of his first case was a woman who had tried ineffectually numerous remedies, among others electricity and galvanism. On the application of the magnet, the pain changed its place, and gradually diminished: her nights were quiet, and when he wrote to me, he hoped to make a radical cure. He also relieved his friend the professor of Sculpture, who was much tormented with the same disease, and who had previously tried the most approved remedies. "Rheumatic affections, the most painful sciatic, nephritic colics of the most obstinate kind, cephalgia-spasm of the stomach, nervous cramps of the organs of the lungs (*poitrine*) and of the inferior extremities, suffocating palpitations, trembling and starting of the locomotive system, convulsions, epilepsy, comatose affections, &c. have been cured or relieved so as to leave no doubt of the true medicinal action of the magnet upon the animal economy. Let us add that the effects alleged have been observed by men of distinction in the art, as D'Azyr, Jeanroy, Roussille, Chamsoe, and the author of the excellent memoir inserted in the *Trans. of the Roy. Soc. Med.* I would not give here my particular experience; what would one negative fact prove against so many authentic proofs? Madam B * * * affected with a complaint similar to the one described by Mr. Lenoble, was not cured. I have seen, nevertheless, a frontal neuralgia, radically cured, by the repeated use of the magnet."

"It remains for us to describe the mechanical application of the magnet. Two different modes have been heretofore employed: according to the first of these modes, pointed out by Mr. Lenoble, little bars are used, from which are made bandeaus, collars, bracelets, garters, &c. or plates of different figures are employed and applied in contact with the skin, on different parts of the body, such as the breast, the region of the heart, the nape of the neck, arms, legs, soles of the feet, &c. According to the second method, you apply a bar to the part affected. These bars are not always simple: sometimes they are composed of many plates: sometimes in the shape of a horse-shoe." *Nouveaux élémens de Thérapeutique, par J. L. Alibert. Tome second, p. 456. Paris, 1814.*

An intelligent pupil, Mr. Malcolm, discovered, that the valve of the colon may be overcome, and fluid forced in the retrograde direction, by pressing on the abdominal parietes in the right iliac region over the *caput cæcum*. This pressure has the effect of compressing the colon between the anterior muscular parietes and the internal iliac muscle, so as to approximate the commissures of the valve, and thus to open it. Whether it be so easily overcome in the living state, I have not had an opportunity of ascertaining; but a case of hernia occurred a few days ago, where injections *per anum* passed through the valve into the ileum, and flowed out at a false anus in the left groin. This patient was not *in articulo mortis*, but had considerable strength. *Edin. Med. and Sur. Jour. July, 1822.*

MEDICAL INTELLIGENCE.

CIRCULAR.

Proposals by Dr. Wm. H. Hening, of Richmond, to establish by Subscription, a Vaccine Institution, for the benefit of the people of Virginia.

THE necessity of preserving a constant supply of the pure Vaccine infection, is deemed of such high importance, that in almost every part of Europe, Vaccine institutions have been created and protected by almost every government. In our own country, laws creating similar institutions have been enacted; viz. the act of Congress entitled "An act, to encourage Vaccination," and the act of the Legislature of this state, creating the "office of Vaccine agent." It is deemed scarcely necessary to advert to the causes which led to the repeal of these very salutary laws: they must be known to all who have taken any interest in the subject. It is sufficient to say, that it was not produced from a loss of confidence in the prophylactic powers of Vaccination, but principally from a belief, that, if repealed, that kind of monopoly which their existence was believed to create, would be destroyed; and consequently it would be left to the exertions of individuals, and the object desired would be with more certainty attained. Whether these expectations are to be realized or not, remains to be seen. To the man of research, whether of the medical profession or not, it is scarcely necessary to say any thing relating to the present received opinions of the efficacy of Vaccination, in exterminating the Small-Pox. It still continues with rapid strides to extend its blessings to the world, prostrating, in its course, every obstacle which ignorance, prejudice, and superstition itself, had reared against it. In one of the reports of a foreign Vaccine establishment, it is said, that of 2,671,662 persons *properly* Vaccinated, and subsequently exposed to the contagion of Small-Pox, only seven took that disease. All the annual reports of Great Britain unite in saying, that Small-Pox does not occur after Vaccination, in a greater proportion than Small-Pox again occurs in the same person after having once received it, either by inoculation, or in the natural way. And even admitting that Small-Pox would in every instance follow Vaccination, still it would remain of the utmost consequence to continue its use, in as much, as the malignancy of Small-Pox would be destroyed, and the disease in every instance rendered mild, and unattended with danger.

I have been lately very warmly solicited by gentlemen of standing, in different parts of this state, to establish by subscription, a Vaccine institution. The attempt is now made, fondly believing that I shall meet with that degree of encouragement which the importance of an institution of the kind demands. If that support is afforded, the people of this state will have it in their power to derive every benefit from this important discovery, on terms which all must say are reasonable; and that from an establishment of their own creation, and conducted by one of their own citizens. From the nature of things, Vaccination must be almost exclusively confined to the medical profession. It is to gentlemen of that profession, therefore, that I more particularly address myself; and it is from them that I expect to derive the most effectual aid; all other persons, both in this and the adjoining states, who feel an interest in the formation of such an establishment, are invited to subscribe.

The practicability of supplying every applicant, with the genuine Vaccine infection, from an institution located in this city, was most clearly evinced while I held the appointment of Vaccine agent for this state. The Vaccine Virus was distributed to 62 counties, and in many instances to six or more individuals in the same county. Since the repeal of the law creating that office,

I have kept up a constant supply of pure Vaccine Virus, and have most freely supplied all who have applied for it, both in this and other states, without any compensation.

I propose to furnish it hereafter on the following conditions :

1. Five dollars, paid one year after subscribing, will entitle every subscriber to be supplied with the genuine Vaccine matter as often as is desired, for five years.

2. Ten dollars one year after subscribing, for life.

I am disposed to appoint an agent in every county ; any gentleman who will take upon himself the trouble of obtaining not less than five subscribers, and sending me their names and place of residence, with the amount subscribed, shall be entitled to the benefits of the institution without any charge.

☞ Editors of newspapers in this and adjoining states, by giving this a few insertions in their respective papers, will be entitled to the benefits of the proposed establishment without any charge.

WM. H. HENING.

. Subscriptions will be received by the Proprietor of the American Medical Recorder.

The Medical Lectures in the Institutions mentioned below, commence as follows, viz.

OF HARVARD UNIVERSITY.

At the Massachusetts Medical College, in Boston, on the third Wednesday in November.

UNIVERSITY OF THE STATE OF NEW-YORK.

COLLEGE OF PHYSICIANS AND SURGEONS.

City of New-York, August 21, 1822.

The College of Physicians and Surgeons will commence their Course of Lectures for the ensuing winter session, on the first Monday of November, (the 4th) at the College, in Barclay-street.

DR. POST, on Anatomy and Physiology.

DR. HOSACK, on the Institutes of Medicine and Practice of Physic.

DR. MACNEVEN, on Chemistry.

DR. MITCHELL, on Botany and Materia Medica.

DR. HAMERSLEY, on the Clinical Practice of Medicine.

DR. MOTT, on Surgery.

DR. FRANCIS, on Obstetrics and the Diseases of Women and Children.

The Board of Trustees deem it proper to make it known, that in conformity with the Ordinance of the hon. the Regents of the University, passed in March, 1822, every student is required to attend two full Courses of all the Lectures delivered in this College, before he can be a candidate for the Dectorate : unless said student shall have previously attended lectures in said College, prior to the Session of 1822-3, or shall have previously attended one entire Course of Lectures, delivered in some other respectable Medical School or University.

The Matriculation Fee is *Five Dollars*, which includes the use of the Library.

N. B. Under existing circumstances, the Course of Clinical Medicine is not sub-graduate.

WRIGHT POST, M. D. *President.*

JOHN W. FRANCIS, M. D. *Registrar.*

UNIVERSITY OF PENNSYLVANIA.

The Medical Lectures will begin as usual on the first Monday in November.

PHILIP S. PHYSICK, M. D. Professor of Anatomy.

JOHN REDMAN COXE, M. D. Professor of Materia Medica and Pharmacy.

NATHANIEL CHAPMAN, M. D. Professor of the Theory and Practice of Medicine, and Clinical Practice.

THOMAS C. JAMES, M. D. Professor of Midwifery.

ROBERT HARE, M. D. Professor of Chemistry.

WILLIAM GIBSON, M. D. Professor of Surgery.

WILLIAM E. HORNER, M. D. Adjunct Professor of Anatomy.

By a resolution of the Medical Faculty, all *ad eundem* qualifications for a medical degree will cease after the 24th day of June, 1823, except in the cases of Students who have attended a course of Lectures in an Institution governed in its graduations by the same regulations as this University.

W. E. HORNER, M. D. Dean of the Medical Faculty.

UNIVERSITY OF MARYLAND.

At Baltimore, the last Monday in the month of October.

* * * *Medical Institutions generally are respectfully informed, that Notices, and Advertisements connected with them, will be admitted in this Journal, free of expense, as well as all notices connected with the science of Medicine.*

J. V. Seaman, New-York, has in Press, and will publish in Quarterly Numbers, *The Medico-Chirurgical Review, and Journal of Medical Science*;—Conducted by associated Physicians and Surgeons, and superintended by JAMES JOHNSON, M. D. Licentiate of the Royal College of Physicians, London.

Each number of this work will contain upwards of 230 pages, forming a volume of nearly 1000 pages a year, each volume will contain three engravings. The price will be \$5 per annum, payable on the delivery of the first number.

There are seven numbers of this Journal now published in London, and it is proposed to commence at the first number, and to continue to reprint one number every month or six weeks, until we come up with the last number published in London, after which a number will be published regularly once a Quarter, in less than two months after their appearance in London.

* * * *Subscriptions for this valuable work will be received at the office of the American Medical Recorder.*

Hayward's Translation of the Anatomie Generale.

We are happy in being able to announce the publication of the first volume of Dr. Hayward's Translation of the General Anatomy of Bichat, by Messrs. Richardson & Lord of this city. The translation of the remaining volumes, we understand, is completed, and will soon be published.

This, the latest completed work of its author, has very high claims upon the attention of the medical public. It was the result of the labour of his more mature years, and although hastily and often carelessly written, had been previously the subject of much thought, and been thoroughly digested and arranged in his own mind. The materials indeed of which it is composed, and the opinions and principles which it presents, had been brought forward and developed many times in his lectures before being made the subject of this work. The writings of Bichat, which have been already published in this country, have, we believe, been sufficiently circulated to create some interest in the profession with regard to that which is now offered to them, and we do not hesitate to say that it will be found even more valuable and instructive than those. It contains, in fact, under a different form and arrangement, nearly all

that is new and important in his *Physiological Researches upon Life*, and his *Treatise on the Membranes*, besides an immense amount of information upon the organic structure and properties of the different parts of our systems, which was either originated by himself, or at least is no where else to be found in a corrected and methodized form.

It is our intention, in a future number, to enter into some detailed account of the object and plan of this work, with the view of producing in the mind of the profession a proper impression of its value and importance. In the mean time we would earnestly recommend its perusal and its possession to every physician. It will most richly repay a careful study, and form a valuable addition to every medical library.—*New England Journal of Medicine and Surgery*, for July, 1822.

American Orchardist.

Dr. James Thacher, well known as the author of the *American Dispensatory*, has published a work in one vol. 8vo, entitled,

"The American Orchardist, or a Practical Treatise on the culture and management of Apple and other fruit trees, with observations on the diseases to which they are liable, and their remedies. To which is added the most approved method of manufacturing and preserving Cider. Compiled from the latest and most approved authorities, and adapted to the use of American Farmers. By JAMES THACHER, M. D. Fellow of the American Academy of Arts and Sciences, and of the Massachusetts Medical Society," &c. &c.

This work will be found interesting and profitable to the farmer and scientific agriculturist. The following recommendation is from the president and officers of the Massachusetts Agricultural Society.

The gentlemen who sign the following Recommendation, are officers of the Massachusetts Agricultural Society, although they do not subscribe as such; but cheerfully consent, as individuals, to honour the publication with the following testimony of their approbation.

BOSTON, SEPTEMBER 10, 1821.

WE have perused, at the request of Dr. Thacher, his *Treatise on the Culture of Fruit Trees, and the Art of making Cider*; and, although we cannot hope that our opinions will have any great weight with the public, yet, as the author is desirous that we should express them, we have no hesitation in saying, that it appears to us an excellent compendium of all that has been written on the subject—comprising, within a moderate compass, the result of the observations of the experienced cultivators of Europe, and of this country—with many original suggestions of his own—and we believe that such a work will be of great value to those who wish to obtain a knowledge of this branch of agriculture, but who cannot have access to the original sources, from which, with great labour, and, we believe, good judgment, this compilation has been formed.

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The subscriber, who for several years past has been entrusted with the vaccination of the poor, under an ordinance of the city councils, and to whom numerous applications have consequently been made for furnishing vaccine matter—has heretofore gratuitously distributed it, at a considerable expense of time and labour, to practitioners of medicine, in this as well as in other states of the Union. Under that ordinance it is his duty to supply the practitioners of the city—but in consequence of the increased demands from every section of the country, and with a view to accommodate with certainty the physicians of the United States, he has determined, by the advice of many of his medical friends, to open an office for the distribution of genuine vaccine virus.

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N. B. Applications by letter, post paid, enclosing three dollars, will at all times receive immediate attention.

The editors of Medical Journals in the United States, are respectfully requested to give the above a few insertions in their respective works.

Philadelphia, May 10, 1822.

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